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NOVEMBER 1986

AMERICAN CITY & COUNTY®

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Rx for Clean Water

Readers Reveal Local Priorities

s Your Lighting orth the Price?

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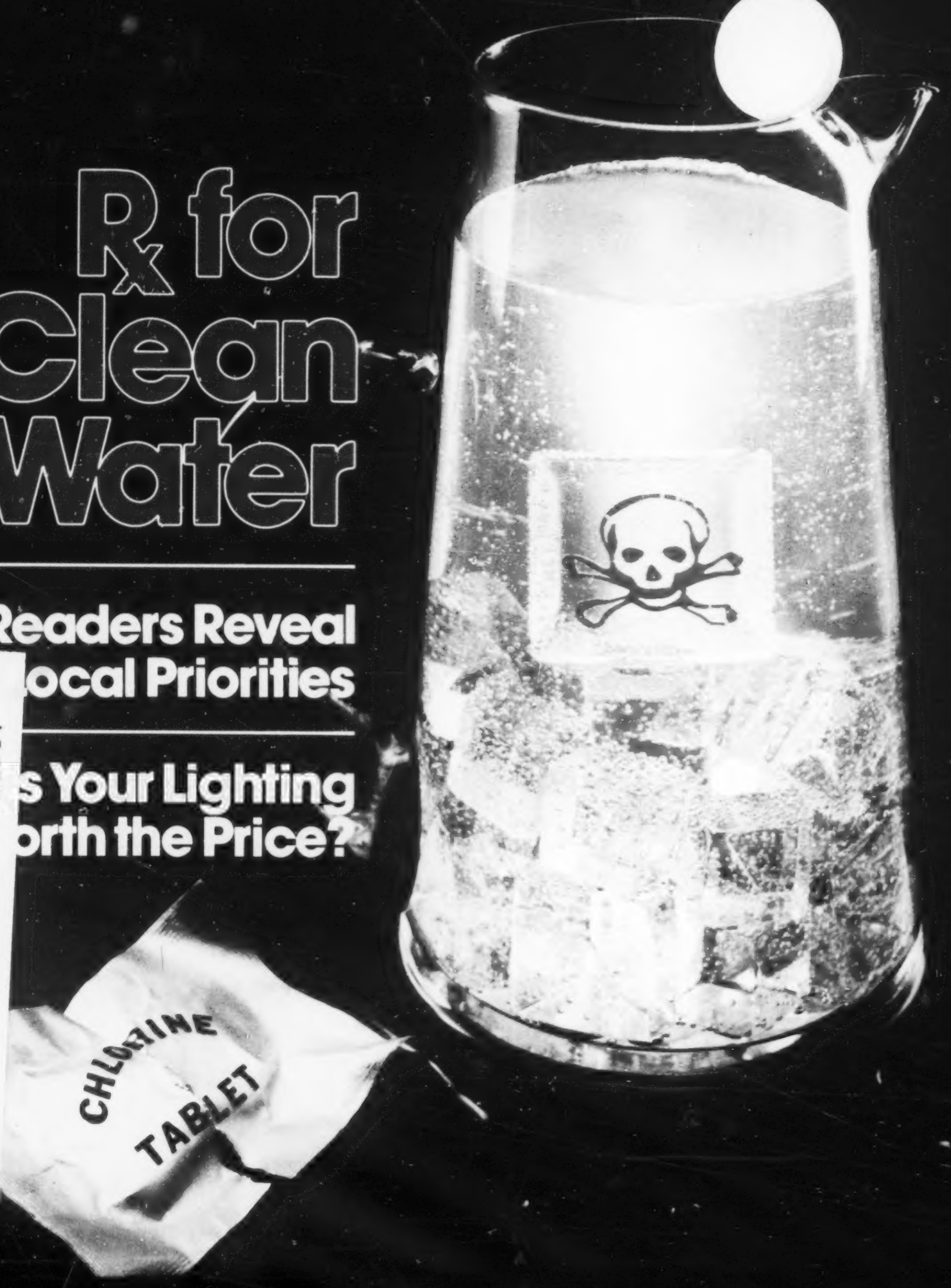

A Publication of Communication Channels Inc

AMERICAN CITY & COUNTY

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November 1986

Vol. 101, No. 11

FEATURES

32 Rx for Clean Water
The cost of drinking water is about to increase as public officials learn more about the newest concern — groundwater contamination.

34 ☐ EPA's Ravan: 'Attitudes Must Change'
36 ☐ Redistricting Plan Boosts Meter Reader Productivity
40 ☐ Wichita Falls Fights Chronic Flooding Problems
41 ☐ Drinking Water's New Guidelines
42 ☐ Conservation Eases Drought in New York

48 Infrastructure Needs Dominate AC&C Survey
The annual poll of issues and trends shows local leaders increasingly concerned with infrastructure shortfalls and financing.

54 Infrastructure Shortcomings Gain Public Awareness
A new report says the nation's deteriorating infrastructure is becoming better understood by the general public.

58 Is Your Lighting Worth the Price?
Government offices can improve worker productivity and morale with better lighting systems, while also conserving energy.

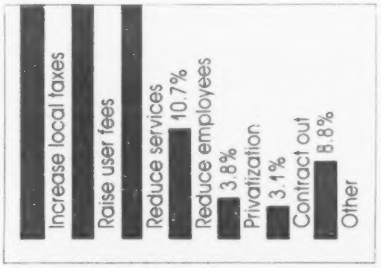
60 ☐ Lighting System Brightens Texas Complex
62 ☐ Product Review: Lighting Equipment

64 From Rags To Riches
While Washington fiddles, local governments have plowed ahead in establishing more than 1,300 productive enterprise zones.

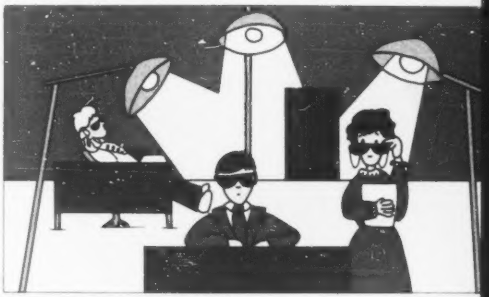
66 ☐ Connecticut Expands Pilot Enterprise Zone Program
68 ☐ Aggressiveness Pays Off for Gadsden
70 ☐ Albuquerque Alleviates Fairgrounds Flooding
74 ☐ Portland, Maine, Grows Through Cooperative Effort

About the Cover

The nation's drinking water supplies are under scrutiny again with contamination of groundwater resources the newest concern. Coverage begins on page 32. (Photo by Jerry Hoy of Double Vision in Atlanta.)



AC&C Survey 48



Productive Lighting 58

DEPARTMENTS

22 Across America
8 Calendar
95 Classified
4 Editor's View
14 Financial Management
12 Inside Washington
94 Literature
100 Municipal Cost Indexes
86 New Products
16 Newsmakers
20 Office Automation
91 Professional Services
10 Readers' Forum
80 Resource Recovery

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AC&C
Survey

Infrastructure Needs Dominate Survey

The annual *American City & County* poll of issues and trends shows local leaders increasingly concerned with infrastructure shortfalls, as well as new financing dilemmas.

By Ken Anderberg, Editor

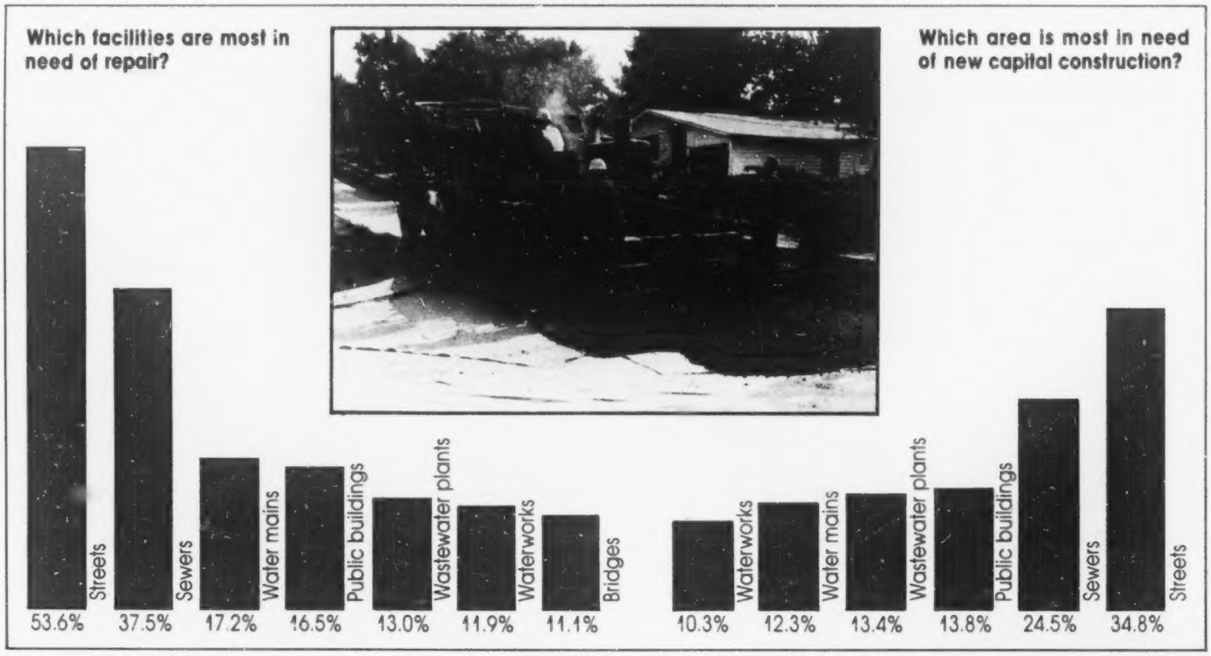
"Many people now look at local government in very much the same vein as they do our federal government. That is to say that government should do everything for everyone. Now we are confronted with the reality that with the withdrawal of federal monies, there are a number of services, which people had grown to expect, which will either be drastically reduced or not done at all if local monies are not raised to replace the lost federal dollars."

Mayor R.B. Schwartz,
Hannibal, Missouri

Local governments — city, county, township and special district — are faced with perhaps their toughest challenge since the early 1900s, when contaminated water supplies and inadequate waste removal systems threatened the health of every person living in their borders. But the crisis now is not health, it is infrastructure; the challenge is not system-related, it is economic. And the answers, then as now, are uncertain.

For certain, local governments have a massive task in front of them — repairing and replacing an infrastructure network without the federal financial assistance that has come to be expected by public officials and their constituents. But the challenge of maintaining streets, bridges, wastewater and water systems, mass transit, parks, trash collection and disposal, and a myriad of equally important public works services will not vanish magically along with federal monies. So somebody will pay.

In its annual year-end survey of local government decision-makers, *American City & County* addresses these needs and the potential local government response. But as Mayor Schwartz of Hannibal states, the choices may not be easy. There are likely to be casualties



along the way, as well as a new understanding of what government should and should not, and can and cannot do for its citizens.

The 1986 *American City & County* Survey of Issues and Trends is a poll of 261 mayors, city managers and public works directors on topics of concern to local governments. This year's study focuses on infrastructure repair and construction, reduced federal funds for domestic programs, financing, computer applications and equipment purchasing. Every region of the country is represented, as are communities with populations of less than 10,000 to more than 500,000.

Among the chief conclusions drawn from the study is while much of the nation's infrastructure is in need of repair, diminished federal funding will mean most communities will reduce or forego expenditures for that repair. Local taxes and user fees will be increased also, as cities and counties try to make up for the loss of General Revenue Sharing and the higher cost of bond financings resulting from tax reform.

"The elimination of revenue sharing will have a drastic effect on the services to our residents," says Robert Price, mayor of Sharon, Pennsylvania. "The reduction of Urban Development Action Grants and Community Development Block Grants will deprive our community of a valuable economic development tool at a time when it is needed the most."

"A gradual phase-in of cuts in programs over a 10-year period would give us time to adjust," Price adds. "However, the drastic cuts now proposed and coming from Washington will be devastating."

Nationally, the need for infrastructure repair has reached serious proportions in nearly half the communities surveyed. Forty-six percent of respondents rated their infrastructure repair needs as serious to very serious. Only 8.4 percent say their infrastructure is in good repair.

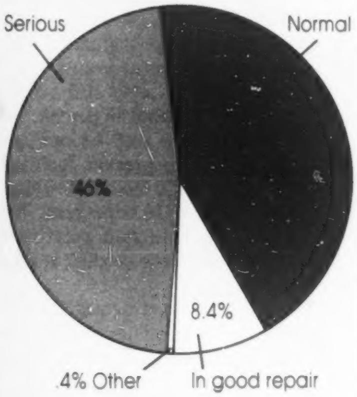
The greatest rehabilitation requirements, according to the survey, exist in the Southwest, where 60 percent say their needs are serious and only 4 percent are in good repair. The Southeast also has a significant problem, with 50 percent citing serious conditions. The highest percentage of infrastructure work for communities with populations above 50,000 occurs in the Midwest (73.3 percent) and the Southwest indicates the greatest need among communities with less than 50,000 people (71.4 percent). Generally, repair is most necessary in smaller cities and counties, but that work falls mainly into the lower range (under $5 million) in cost.

By far, the number one area of need is for rehabilitation of streets, highways and bridges. But a wide variety of local facilities apparently are ready for facelifts, as evidenced by the fact respondents checked multiple categories despite instructions to indicate only the single category most in need of repair. As a result, 64.7 percent of those surveyed say streets and bridges are their top priority, followed by wastewater collection and treatment systems (50.5 percent), drinking water networks (29.1 percent), and public buildings (16.5 percent).

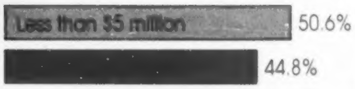
Streets and bridges are a priority in the Mid-Atlantic region (63.7 percent), Southwest (42 percent) and Northeast (41 percent). Wastewater collection and treatment rates highest in the Southwest (44.9 percent) and water supply is cited most in the Northeast (21 percent) and West (20 percent).

Among smaller communities, the Northeast has the greatest need for street and bridge repair (42.2 percent) and water supply systems (25.4 percent), and the Southeast names wastewater facilities (48.3 percent). Jurisdictions with more than 50,000 people in the Midwest rate their highest priority as streets (63.2 percent), while the chief concern for wastewater occurs in the Southeast (33.4 percent), and for water supply in the West (20 percent).

How would you rate your community's need for the repair of infrastructure facilities



How much money will you need for this repair?



In their comments, survey participants translated their infrastructure problems into concerns about funding, and in particular, the necessity of complying with federal mandates without federal money.

"The continual increase of federally mandated costs is a worse problem than the termination of such programs as revenue sharing," says P.L. Munck, city manager of Somersworth, New Hampshire. "Some, such as permits for stormwater discharge, approach nightmare proportions."

"The problem is not so much federal fund reductions as it is federal fund reductions combined with federal regulations," adds R. Gregg Reep of Warren, Arkansas, who gives as an example the reduction of environmental program funds.

And, as M.C. Rigante of Belle Isle, Florida, explains, "State and federal mandates must be funded. My horse won't work with more weight in the saddle — and his legs cut off!"

The expense of repairing or upgrading local infrastructure systems in 1987 is expected to be high, survey respondents say. More than $5 million will be needed for this task next year in 45 percent of the communities surveyed, with 13 percent saying their needs will exceed $20 million.

The effect of these needs, coupled with reduced federal funding, will be increases in local taxes, say one-third of the respondents. Another 30 percent say they will either increase or implement user fees, and 28 percent plan to reduce services. Nearly 11 percent of the communities surveyed plan to reduce the number of employees, and surprisingly, only about 7 percent intend to pursue privatization or contracting out as alternatives.

The survey shows local taxes are most likely to be increased in the Northeast (40.3 percent) and the North Central region (39.1 percent), and least likely in the West (8 percent). Increased user fees are the prevalent choice for raising needed revenue and paying for services in the North Central states (43.5 percent), Southeast (36 percent) and Southwest (35.5 percent).

The West (12 percent), Midwest (11.5 percent) and Southeast (10 percent) will be the most likely areas for reductions in public employees. And the Southwest (38.7 percent) and West (36 percent) most favor reducing services to meet budget requirements.

"The most serious reductions in city budgets are yet to be realized," says Robert Payne of Pensacola, Florida. "Federal cutbacks have already begun to affect cities in terms of housing, mass transit and social services. The impact has been to levelize the provision of services. Additional cutbacks will no doubt cause an actual reduction of services."

And from Mayor Maurice Pettissie of Wallace, Idaho, "We have used our revenue sharing monies for non-repeating expenses and equipment update. The loss of these funds slows our programs, but it will not seriously affect our survival or future growth. It will, however, make it more difficult to acquire matching monies for grants."

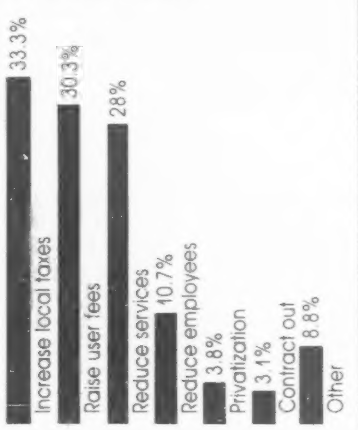
Many communities also cite a need for new facilities. Almost 36 percent say this need is serious to very serious and only 4 percent report present facilities are adequate. Again, streets and bridges are rated highest at 38.6 percent, but wastewater collection and treatment systems come in a close second at 37.9 percent.

As the U.S. Environmental Protection Agnecy's 1988 deadline for wastewater treatment compliance nears, this area of new construction is expected to become more of a priority with local governments. Drinking water supply and treatment systems are listed by more than 22 percent of those surveyed, while public buildings are named by 14 percent.

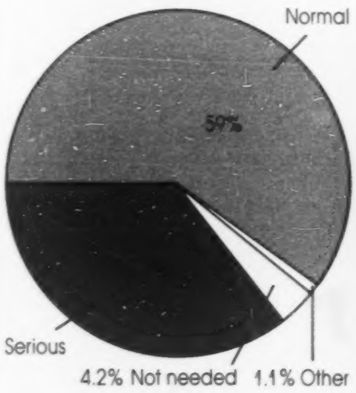
Regionally, new infrastructure facilities are a priority in the Southwest (64 percent) and Southeast (45.2 percent). Smaller communities in the Southwest, in particular, cite an acute need for new construction (78.6 percent).

According to survey results, the West most needs new roads and bridges (45.8 percent), the Northeast expects construction for wastewater systems (33.3 percent), and the Southwest is most concerned about building new water supply projects (26.6 percent).

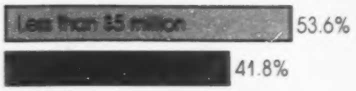
What will be your first response to reduced federal funds?

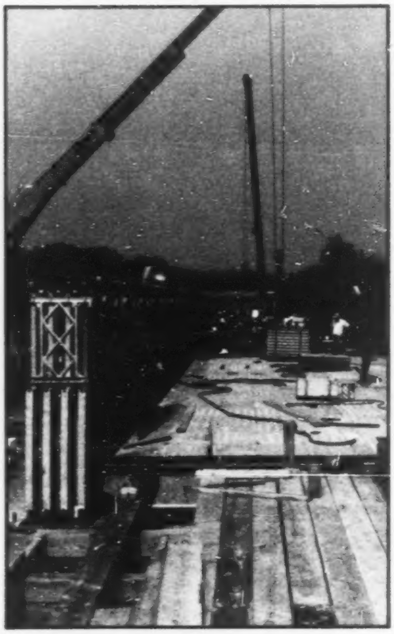


How would you rate your need for new infrastructure facilities?



How much money will you need to construct these facilities?





Nationally, a significant 42 percent of respondents say their new infrastructure needs will require in excess of $5 million in 1987. Of that total, 10 percent report they will need more than $10 million and nearly 11 percent say more than $20 million will be necessary.

The Southwest faces the most serious problem in terms of total dollars required to provide the new infrastructure for a burgeoning population. More than $5 million will be needed by 64 percent of survey respondents in this region in 1987, including 45.5 percent of larger communities needing in excess of $20 million.

In Western states, new infrastructure requirements are relatively minor, with more than 70 percent of respondents expecting the tab to be less than $5 million next year. But most jurisdictions surveyed in the Midwest say they will seek more than $10 million for new construction in 1987.

In other areas, trash disposal options for the future range from public landfilling, the choice of 41 percent of respondents, to private landfilling (19 percent). Significantly, almost 30 percent say they are considering waste-to-energy, or resource recovery disposal options.

Computer use rising

Many communities plan to introduce office automation/computers to various departments and functions in 1987. Fifty-one percent of respondents plan to purchase such equipment next year, with the majority of purchases (74 percent) going to administrative departments. More than 47 percent of the public works departments represented in the survey plan to use computers next year, including water supply (24.5 percent), wastewater (23 percent) and streets (19.9 percent).

The greatest increase in use of office automation equipment for public works departments is expected to occur in the North Central (21.7 percent) and Northeast (18.7 percent) regions, with larger communities in the Southeast (26.1 percent) and Southwest (25 percent) expected to integrate office technology into public works activities in 1987.

This increased use of computers and other office equipment by public works departments, in an apparent effort to increase productivity and efficiency, coincides with survey results showing public works activities are most likely to be affected by federal budget cuts. More than 71 percent of the communities polled say the first department to be affected by budget reductions will be public works. About one in 10 police and fire departments nationally also will be affected.

Consolidation of city and county services is another option being considered

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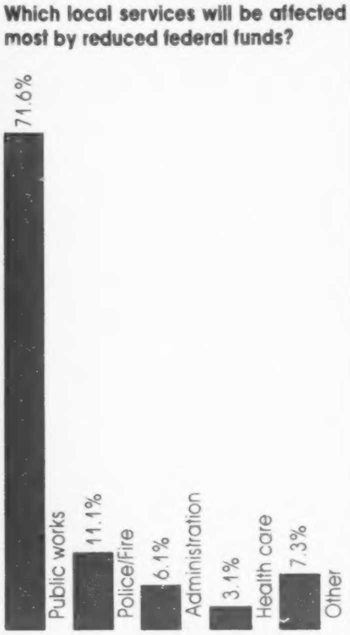


Which local services will be affected most by reduced federal funds?

by local governments to reduce budgets. Nearly 38 percent of the 102 public officials responding to inquiries on consolidation say they are considering this alternative. Refuse collection and disposal is the most common area being reviewed for consolidation (21.5 percent), with water supply, wastewater collection and treatment, and police and fire services also mentioned often.

"With the continued reduction in federal funds, a closer and more coordinated relationship must be developed between city, county and state governments to prevent duplication of services," says Mayor Robert Young Jr. of Henderson, North Carolina, "and to promote consolidation of as many services as possible."

But a respondent in the Midwest counters, "City residents want to be in control of addressing their own needs, but it is becoming less and less feasible economically. They don't want to see themselves absorbed by larger entities which they feel do not understand what their particular community needs."

Whether the decisions will be to raise local taxes, reduce services or consolidate governments, public officials are preparing for the inevitable reduction in federal assistance. Their task has become tougher, as has the job of convincing their constituents that difficult choices will have to be made.

As L. Stelter of New York City says, "The general public must be enlightened as to the essential life-serving nature of public works. The 'Garden of Eden' mentality is pervasive in our country."

And, adds John Davis of Logansport, Indiana, "There is no tougher job than that of a local elected public official. The recent trend by the federal government to reduce funds coming to local government will make it that much harder to meet the needs of the urban public." □

Coming Next Month

- **1986 Awards of Merit Winners Announced**
- **Solid Waste — Landfill Gas Recovery**
- **1986 Review/1987 Forecast**

MUNICIPAL COST INDEXES

The **Municipal Cost Index** rose to 339.7 in November, a rise of .3 from October's figure. The **Construction Cost Index** and **Consumer Price Index** also posted slight gains for November. The **Producer Price Index**, however, continued to decline, falling .5 to 297.2, a 10-point decline from last year's figure.

In this month's marketbasket, environmental controls showed the greatest loss, falling 16 percent from last month, and 41 percent from last year. Some products in the fuel and oil family, which have been sliding steadily since the first of the year, regained ground in November. Diesel fuel showed an increase of 5.9 percent from October, while fuel oil no. 2 rose by 14.4 percent. Liquid petroleum gas and residual fuel, however, continued to fall.

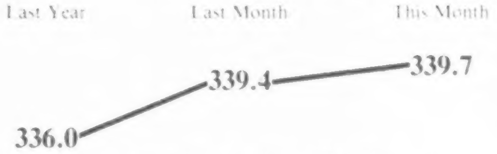
— Compiled by Joe Morris

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.2	–.1	1.0
Apparel	185.2	.1	.8
Asphalt Roofing	387.3	.1	–5.1
Books	139.8	.2	4.5
Chemicals, Industrial	314.9	–.8	–8.4
Coal	537.8	–.1	–2.2
Concrete Products	325.0	–.3	.7
Construction Machinery	367.1	.1	1.3
Diesel Fuel	303.8	5.9	–48.7
Electric Components	202.5	0	2.4
Electric Lamps	348.2	.2	1.0
Electric Power	467.0	–.1	.8
Engines, I.C.	354.0	–.1	2.0
Fans, Blowers	365.6	0	1.6
Fertilizers, Mixed	252.3	–.9	–2.8
Floor Coverings	194.2	.1	2.2
Flow Instruments	236.4	–.2	1.8
Footwear	262.2	.3	1.6
Foundry Products	361.9	–.4	–.7
Fuel Oil No. 2	353.4	14.4	–41.5
Furniture	318.2	–.3	2.3
Gasoline	310.7	–2.0	–46.0
Generator Sets	353.3	–.1	.5
Glass	234.1	.1	2.9
Glass Containers	400.0	.1	3.3
Gypsum Products	343.9	–1.1	1.7
Hardware	306.9	.1	.1
Heating Equipment	269.0	.1	3.1
HVAC Controls	129.0	.8	2.4
LP Gas	296.8	–16.0	–41.7
Lubricants	365.6	–1.0	1.0
Lumber	311.8	–1.5	2.3
Metal Fabrications	317.2	.4	.7
Millwork	321.8	.1	2.5
Motor Vehicle Parts	358.0	–.1	.5
Mowers	264.2	.1	1.0
Natural Gas	1158.6	–3.0	–14.9
Office Machines	154.5	.2	.4
Paint	282.4	0	1.9
Paper	307.5	.6	1.2
Passenger Cars	232.5	–.6	1.9
Plumbing Fixtures	322.7	–.3	3.0
Plywood	233.3	–1.2	–1.9
Portland Cement	349.2	–.4	–3.2
Residual Fuel	360.8	–17.0	–59.5
Sand, Gravel	319.6	.2	2.9
Sanitary Papers	383.4	.1	.9
Soaps, Detergents	272.3	–.6	–.7
Sporting Goods	207.4	.5	1.9
Steel Mill Products	349.3	0	–4.4
Struc. Clay Products	308.2	–.2	3.5
Switchgear	286.6	.5	1.5
Tires, Tubes	233.5	0	–1.1
Transformers	233.9	.8	.5
Trucks	348.0	.2	4.4
Valves	106.9	0	1.6
Wire, Cable	205.4	–.1	–.2
Wiring Devices	374.9	–.2	3.3

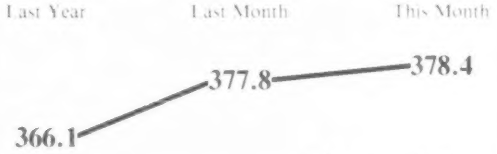
At-A-Glance Changes

MUNICIPAL COST INDEX



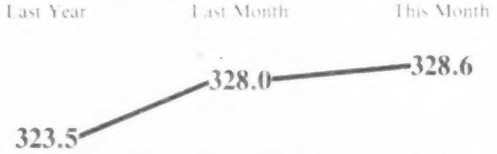
Percent Change From Last: Month **.09** Year **1.1**

CONSTRUCTION COST INDEX



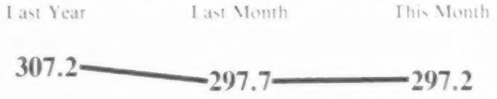
Percent Change From Last: Month **0.2** Year **3.3**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **0.2** Year **1.6**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **–0.2** Year **–3.3**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	611.4B	.4	6.9
Federal Grants	106.9B	3.2	8.7
Durable Purchases	22.4B	2.3	9.3
Consumables	36.7B	–5.2	–4.4
Services	372.0B	1.8	7.8
Structures	61.7B	12.2	13.8
Salaries, Wages	297.8B	1.8	7.3
Surplus	59.9B	–14.4	1.2
Employment	13.810M	.12	1.8

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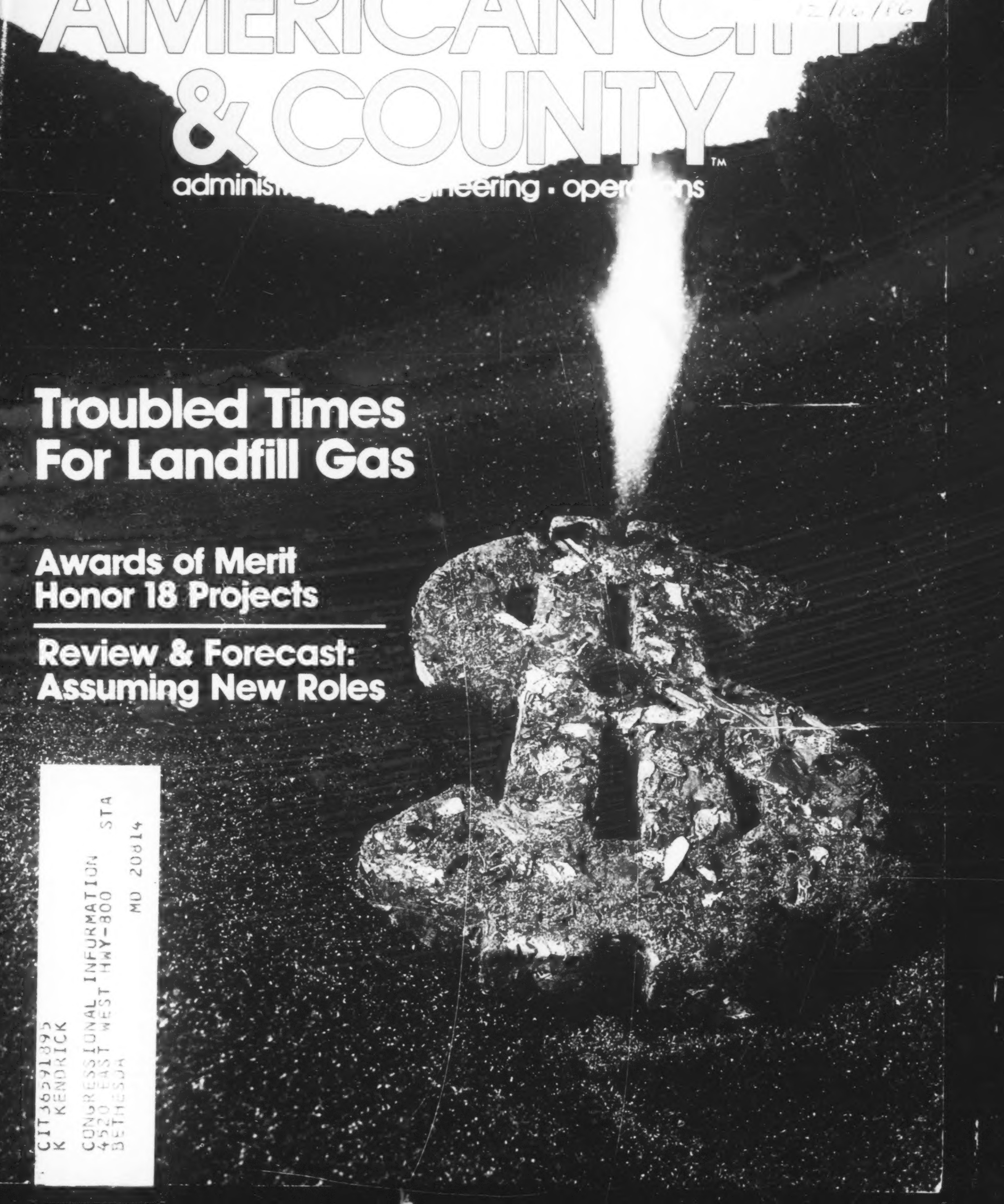

Troubled Times For Landfill Gas

Awards of Merit Honor 18 Projects

Review & Forecast: Assuming New Roles

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Vol. 101, No. 12

FEATURES

22 Troubled Times for Landfill Gas
Declining revenues and a new emphasis on environmental controls are spelling hard times for the landfill gas recovery industry.

25 ☐ Landfill Siting and Public Involvement
26 ☐ Iron Topping Extends Floor Life
30 ☐ Emissions Studied

32 Looking Back, Looking Ahead
Funding cuts, program losses and redefined roles combined to make 1986 a year of changes, and members of the *American City & County* Editorial Advisory Board say 1987 could be as unpredictable.

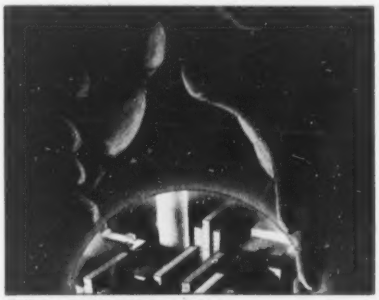
32 ☐ Changes Sweep Across Local Landscapes
34 ☐ Three Strategies May Aid Transition
34 ☐ Local Government Costs To Increase
36 ☐ The Tools Exist To Survive Cutbacks

38 Local Achievements Merit AC&C Honors
Distinctive projects from coast to coast earn *American City & County's* Awards of Merit, recognizing creative solutions to vexing local problems.

40 ☐ Partnership Works for Santa Clara
40 ☐ Jacksonville Drive-up Speeds Service
40 ☐ Amite City, La., Computerizes Billing
40 ☐ Public/Private Effort Aids Houston Park
41 ☐ Cobb Attacks Litter with Watchdog Program
41 ☐ Morris County, N.J., Saves Rail Line
42 ☐ San Francisco System Cuts Sewage Overflows
43 ☐ Bellingham, Wash., Spruces Up Street
45 ☐ Hanford, Calif., Spurs Private Investment
46 ☐ Missouri Cities Tap Water Supply

About the Cover

The landfill gas recovery industry is suffering from low energy prices and tougher government regulations. Cover story begins on page 22. (Photo by Terri Teague of Atlanta.)



32 Review & Forecast

38 And the winners are...

DEPARTMENTS

20 Across America
6 Calendar
57 Classified
4 Editor's View
12 Financial Management
10 Inside Washington
50 Literature
60 Municipal Cost Indexes
48 New Products
16 Newsmakers
14 Office Automation
54 Professional Services
47 Resource Recovery
49 Services & Contracts

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By Elizabeth A. Burns

Resource Recovery Credit Considerations

Decisions made early in the design of resource recovery facilities can have a lasting impact on the credit-worthiness of the bonds issued later to finance the projects. These bonds will be supported in whole or in part by revenues generated by the facility, so bond rating agencies, insurers and credit enhancement providers will scrutinize any factor that could affect a prospective facility's income and operating costs.

Due to the financial risks inherent in the large scale and economic and technological complexity, resource recovery projects necessitate contractual agreements. The primary ones are between the vendor and the sponsoring governmental unit, agency or authority. The terms of the construction and long-term operating agreements, collectively called the "service agreement," are crucial to the project's cost and the securing of financing.

In many resource recovery projects, a local government entity selects a single private company to design, build, operate and perhaps own the facility. The contract with the vendor will include construction, performance and operating guarantees, but those guarantees are not meaningful unless the vendor has the financial ability to meet its obligations. Credit analysts will scrutinize not only the nature and extent of the vendor guarantees, but also the vendor's experience and reputation, financial performance, and credit ratings. The vendor's key subcontractors also will be reviewed.

The two basic types of resource recovery facilities, mass burn and refuse-derived fuel, present a wide range of other technological options. Some technologies have a more trouble-free operating record than others. Credit analysts are most comfortable when evaluating projects similar in size and technology to others that already have proven viable.

Many resource recovery projects are sponsored by newly created authorities, which have no credit or operating history. This complicates the credit process. Credit analysts will consider the authority's structure and its power under the law, but, ultimately, the analysts have to look beyond the authority to the represented community. The community's demographics, economic prospects, contractual commitments under the service agreement, the structure for securing its obligations, and ability to cover the service fee payments (including debt service) will be considered.

Key aspects of the service agreement that will concern the credit analysts include: the allocation of risks between the vendor and the community during construction and operation; the default and termination provisions, which include penalty payments and responsibility for debt service or payment of the bonds if a facility's operations are interrupted or terminated; the structure of the service fee, including the disposition of energy sales revenues or tipping fees exceeding contract minimums; and the level of the community's waste guarantee (the "put-or-pay" commitment) in relationship to the facility's size.

Credit analysts will review energy sales agreements to see how they coordinate with the service agreement and the economics of the project. Federal regulations require public utilities to purchase power from a facility that qualifies as a small power producer, but a contract with the utility is necessary to assure investors future revisions or repeal of federal regulations will not affect the project's economics.

Credit analysts' review of power contracts with utilities will focus on the term, the "take-or-pay" (a guarantee of payment regardless of whether the utility actually takes the power) provisions, events of default and termination rights. But in reviewing contracts with private, industrial energy purchasers, such as steam customers, analysts will look at a company's financial performance, industry position and other factors affecting its stability as a steam user.

To provide a meaningful "put-or-pay" commitment, a community must have some method of controlling the disposal of waste, either by law or through contracts with participating municipalities. Contracts with private haulers generally are considered insufficient guarantees, unless they are major, long-range players in the industry.

Other considerations influencing the credit-worthiness of a resource recovery project include the structure of the debt, such as variable rate, short- or long-term, and the method and timing for contributing equity, if applicable.

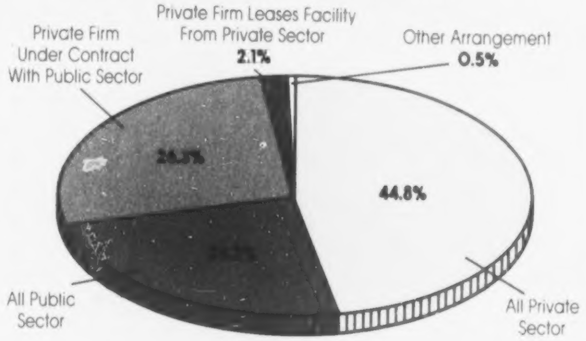
Factors outside the community's control, such as the state and federal regulatory climate, may include rate regulation, taxing powers, procurement law, debt-issuing restrictions, the bond allocation process, the likelihood of litigation, and the availability of insurance.

As actual operating experience by more facilities validates or alleviates analysts' concerns, the importance of some of these factors will change. A growing success record with these facilities also will reduce the close scrutiny now accorded secondary credit factors, and the demands placed on vendors and communities will become less stringent.

The greatest impetus for change in structuring the financing of these projects is the tax reform bill. Under the new act, the tax benefits available to private owners are reduced greatly and, because of lower corporate tax rates, are significantly less attractive.

Finally, as more experience with public ownership accrues, communities will begin to restructure the guarantees, risks and the economic benefits to which they are willing to commit. ☐

Operator-to-Owner Relationships In Resource Recovery Facilities *



*Based on a survey from the 1986-87 "Resource Recovery Yearbook."

Elizabeth A. Burns is managing consultant for Public Financial Management Inc., Philadelphia.

OFFICE AUTOMATION

Mapping Systems Boost Productivity

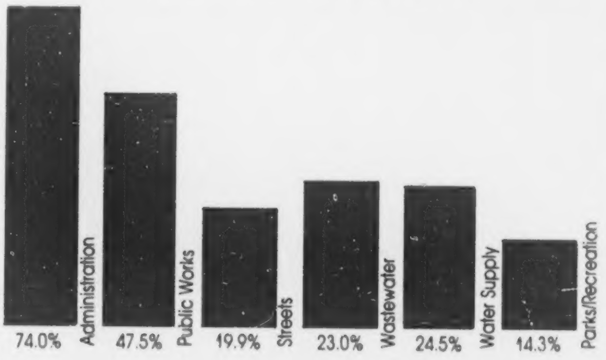
By Joseph H. Cooper

Municipalities and government agencies throughout the country are seeking an economical and reliable automated mapping system. This need extends beyond the mechanization or simple drafting functions to include true integration of the total mapping function with other record-keeping tasks.

Such automated mapping/facilities management systems are needed to provide important record-keeping and operation capabilities for the engineering, planning and administrative functions of local government.

Automated mapping systems have existed since the late 1960s, but implementing and fully integrating a system into an operating environment often has been an expensive, complex and lengthy process. In the past, most mapping systems have been implemented on dedicated graphic machines, which operate on a stand-alone basis and are very expensive. The workstations used with these machines are complex pieces of equipment, assembled from component devices and customized to the particular system.

In which departments are you planning to use computers/word processors in 1987?*



*Based on an *American City & County* survey, November 1986, of 196 U.S. communities.

Thus, the conventional, digital mapping machine requires highly specialized equipment and software dedicated to the mapping function. As a result, conventional mapping systems have been too complicated and expensive for most municipalities.

Most conventional mapping systems are based on the concept of the shared computing resource, in which graphics computations for all workstations are performed by a single, central processing unit. As long as the total computation needs to support the workstation do not overload the unit's capacity, the system will perform adequately. But if the central computer becomes overloaded or additional workstations are needed, only two options are available: buy a larger machine to gain additional capacity or accept the system's degraded performance and capacity.

Fortunately, computer technology has advanced during the past five years, with personal computers (PCs) emerging as a major force. These powerful but inexpensive machines have significant graphic capabilities and are obvious candidates for mapping applications. With PC capacity increased, and costs reduced dramatically, the microcomputer has brought about new software technology, providing a better and less expensive way to accomplish the mapping function.

Today, new approaches to mapping make automating this function a realistic and affordable option. Standard, low-cost, off-the-shelf microcomputers are being used as independent, distributed graphics processors. These "PC-type" machines are combined with standard video display devices, digitizing boards and plotters to serve as fully functional graphic workstations. These microcomputer mapping services offer a full range of capabilities and an unlimited growth capacity at a fraction of the cost of the older stand-alone systems. Most of their inherent limitations also have been eliminated.

The key to this new approach is a distributed network of PC-based workstations linked to a centralized database of mapping information on a host computer. When a map needs to be updated, the PC mapping workstation uses the host machine to retrieve the mapping information. Then the workstation disconnects and performs the mapping functions as an independent machine. This distributed mapping approach permits many workstations to perform mapping tasks simultaneously without degrading each other's performance or interfering with the performance of the host database computer.

The distributed microprocessor-based system differs dramatically from traditional AM/FM systems in a number of important ways.

This new approach uses a multi-processor environment. Each workstation is an independent computer with its own memory, computing resources, local data storage, and input and output devices. No critical computing resources are shared. Thus, the performance of any workstation is not affected by the processing being performed by other users of the system. As a result of this multi-processor approach, the capacity of the system can grow indefinitely by adding more workstations whenever they are needed.

Secondly, this new approach uses a multi-system environment. An independent host computer is used to store the graphics data for all workstations in a centralized database. This means the individual workstations do not require significant data storage capacity because the functions of map manipulation and map storage are completely separated. The independent host machine simply stores and makes available the mapping information as needed.

A global database also is utilized. All objects in the database are organized into a single information structure, like one enormous map.

AM/FM systems, based upon microcomputer technology, are providing significant mapping capabilities at a fraction of the cost of previous systems. Hardware technology is only part of the reason. Microcomputers are the basis for an entirely different approach to AM/FM applications. Fully functional and fully independent workstations can interact with a non-graphic host database system to provide a total mapping solution. This system architecture makes the benefits of AM/FM applications affordable and provides an effective means for integrating new information with existing primary systems. ☐

Joseph H. Cooper is vice president of product development for A/SA Software, Austin, Texas.

Solid Wastes

Troubled Times For Landfill Gas

Declining revenues and a new emphasis on environmental controls are spelling hard times for the landfill gas recovery industry.

By Bill Eldred

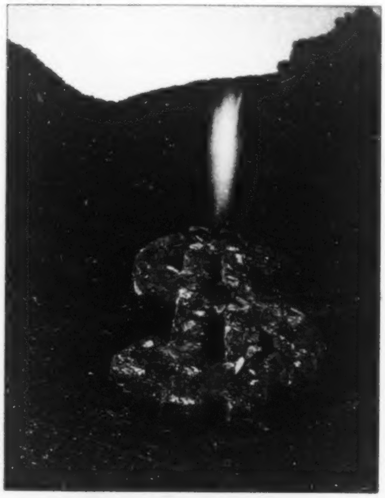
Photo by Terri Teague

In a quiet Seattle neighborhood, 12 homes require evacuation when methane leaking from the nearby Midway landfill is detected in basements.

In Madison, Wis., an apartment building explodes when a tenant lights a cigarette, igniting methane gas suspected of migrating underground — slowly and silently — from the Green Hills landfill, just 100 yards away from the building.

And a smoldering landfill in Jersey City, N.J., casts a mysterious pall of smoke over an urban neighborhood, forcing state officials into emergency action to extinguish the blaze.

The fledgling landfill gas recovery industry has been troubled in 1986. After years of sustained expansion, revenues now are declining along with fuel prices in the worldwide energy downturn. And support is growing for controlling methane and air toxins emitted from landfills at a time when the industry can least afford to buy equipment needed to control these substances. Indeed, a major shift may be in store for the landfill gas industry, from methane recovery to pollution control. Spending for pollution control systems soon may outpace investment in recovery, especially if the energy recession continues and government rules change.



Calls for better control of landfill air emissions are being heard in several states where accidents and contamination have focused public attention on the role of landfills in polluting air and posing literally explosive dangers to life.

Pollution scenarios such as those in Seattle, Madison and Jersey City have convinced many that landfills are not passive neighbors, but active threats posing danger to health and safety. Concern is acute in California, where housing tracts with landfills literally in their backyards are commonplace.

Developing rules and engineering designs to combat landfill air pollution promises an acrimonious debate: advocates of controls often are at loggerheads with methane recovery vendors who fear the new regulations, and the equipment required to meet these standards, will reduce methane yields and reduce profits. Lowering profits, vendors say, ultimately will hurt pollution control because landfill operators will be stripped of funds for installing pollution equipment that vendors regard as "reasonable."

Industry representatives acknowledge the need for controls to limit risks of methane explosion, but add that control should be balanced to avoid disrupting the economics of methane recovery. Failure to take a "reasonable" approach, vendors say, could hurt an industry already suffering the impacts of an energy recession.

Landfills nurture delicate ecosystems, generating more than 200 billion cubic feet of methane, carbon dioxide and trace gases daily. Methane, identical to natural gas, has commercial value if cheaply drawn from landfills and refined to meet the specifications for its main uses: fuel for electric or steam-heat generation and sale to gas utilities after purification.

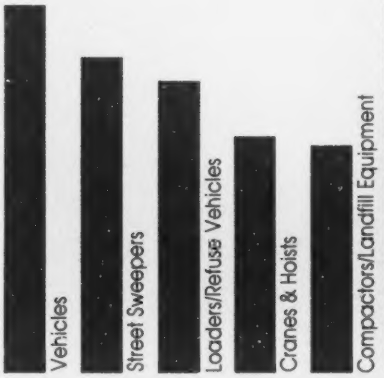
Industry representatives estimate 500 to 700 of the nation's 10,000 landfills are ripe for commercial exploitation. The sheer volume of energy in landfills is surprising: a 40-acre, 100-foot-deep fill makes about 1 million cubic feet of gas daily — enough to light 3,500 homes and to earn revenue of $1 million annually in top energy markets. Gas yields can last from 15 to 25 years.

Gas generation rates vary widely, ranging from 80 to 280 cubic feet of gas per ton yearly for each ton of garbage landfilled. How much gas is created depends on rainfall, temperature, the "organic" content of garbage and how closely the garbage is packed. Methane content in landfill gas ranges from 50 to 67 percent of the total, with the balance composed of carbon dioxide, hydrogen sulfide, water vapor, hydrocarbons and trace substances.

The methane recovery industry has enjoyed rapid growth since its birth a little more than a decade ago. Ellen Bogardus, a CH2M Hill solid waste engineer, says recovery is an old idea that became practical when the energy crisis quadrupled fuel prices during the 1970s. Methane was first recovered commercially at the Palos Verdes landfill near Los Angeles in 1975. Since then, the industry has grown exponentially. Today, plants are being operated or planned by 152 cities and 62 counties in 28 states.

Solid Waste Collection and Disposal

In a recent survey, *American City & County* readers were asked their responsibility in purchasing new equipment for solid waste collection and disposal operations. A total of 180 public works directors and city managers took part in this national sampling.



Profile data published by the Government Advisory Services' *Methane Recovery Yearbook* reveal a complex national industry. Twenty-four vendors now compete to tap the 15 billion cubic feet of exploitable gas generated by the nation's landfills. Since only 15 percent of these reserves are being captured, room for expansion clearly exists, if and when market conditions improve.

According to the yearbook, the "average" landfill currently being tapped for gas recovery holds 5.5 million tons of refuse spread over 150 acres to a depth of 80 feet. Two million cubic feet of gas is yielded per day and recovery systems cost about $3.3 million to install and $200,000 per year to operate. National investment in methane recovery will soon top $500 million, with 90 percent privately held. Landfill owners receive royalties of 10 to 20 percent of energy sales revenues and vendors sell methane, steam heat or electricity in local energy markets at widely varying prices.

The yearbook says three-fourths of recovery projects produce electricity by using methane to fuel engine- or turbine-driven generators. Industry representatives say producing electricity can be profitable because landfill gas needs little preparation to fuel generators, and processing costs are comparatively low.

Another recovery option refines landfill gas to natural gas quality by removing carbon dioxide, water vapor, and trace contaminants. The product then is sold to gas utilities, or used in industrial processes requiring pure methane. Production of this high-quality gas is less common because purification costs are high and utilities often are reluctant to purchase the gas. Still other recovery projects use methane to fuel steam boilers for heating buildings or creating process steam for industry. The steam option requires users to be located close to landfills.

Bogardus, who also chairs the landfill gas committee of the Governmental Refuse Collection and Disposal Association (GRCDA), says landfills ripe for methane recovery should have at least 1 million tons of garbage in place and be filled to a depth of 40 feet over a 40-acre area. Wells are drilled to recover methane from the landfill. The wells usually extend from 50 to 90 percent of the depth and are spaced at regular intervals.

Bogardus says the economics of recovery are helped if an energy user is located close to the landfill. Then, the cost of transporting the energy product — gas, steam or electricity — is reduced greatly. Bogardus urges vendors to weigh project economics carefully before deciding how to use the energy potential of methane. The capital costs of producing methane of high- and medium-heat value usually are balanced against revenue expected from sales of steam, electricity or natural gas. Industry analysts say revenue from energy sales varies widely and depends on local market conditions.

Gary DeFranco of United Environmental Services (UES) is enthusiastic about methane recovery, but he says "the economics must work. If you're dealing with utility companies that want electricity and are willing to pay for it, you've got it made."

UES generates 3 million watts of power harnessed from Long Island and New Jersey landfills. The economic climate, DeFranco says, is most favorable in New York and Pennsylvania where laws establish "price floors" for power bought from landfill plants. The six to nine cents per kilowatt hour paid by Long Island Lighting Co. makes investing in recovery worthwhile, DeFranco says. But in states such as New Jersey, prices to vendors are based on "avoided costs" with no minimums. Industry sources cite four cents per kilowatt hour as the bare minimum at which recovery can be profitable.

Other industry representatives echo DeFranco's view that recovery works best where energy prices are high or where expanding population puts a premium on gas and electric supply, making utilities hungry for power. The *Methane Recovery Yearbook* shows almost 75 percent of the nation's 138 planned or existing methane recovery plants are located in six East Coast states and in California, the national leader with 51 plants. New York has 16 plants, Rhode Island and New Jersey have eight each, Michigan has six and Florida has five. Since 1984, the number of plants in the nation has almost doubled.

But this year, robust expansion of this young industry is being challenged by the 30 percent decline in energy costs affecting gasoline and other fossil fuels, including natural gas. The effects are being felt nationwide, but no plants have closed and industry sources say none are expected to shut down operations.

"The industry is now entering a dormant phase," says Ronald J. Lofy, a California-based consultant specializing in recovery projects, "with many projects being put on the back burner." Lofy has noticed attendance at industry conferences has dropped off, indicating a slackening of interest in recovery. He also sees interest shifting to gas collec-

Landfill Siting and Public Involvement

Most communities do not give much thought to trash disposal until the local sanitary landfill is full and it is time to develop a new one. Then the landfill is suddenly a topic of heated debate. While choosing the site for a new sanitary landfill traditionally has been an uphill battle, Maricopa County, Ariz., found the process improved when the public was informed and involved.

Initially, the county did not envision any significant difficulties in identifying a site for the landfill since the study area consists largely of undeveloped farmland or desert land outside Phoenix, according to Deputy County Engineer Wayne Collins. But that was before the first public meeting drew about 400 angry residents opposed to the scheme.

County Supervisor Carole Carpenter recalls when she walked into the meeting, "people were yelling that they did not want a landfill sited anywhere near the locations then being considered by the county."

The message got through loud and clear. The county promptly expanded the site selection study area and, at the same time, implemented a broader-based public involvement program, enabling area residents to play a pivotal role in the siting process.

Public input to the site selection process was obtained through advisory and steering committees as well as a series of public meetings. The 28-member advisory committee consisted of representatives of local municipalities, area residents, homeowners' associations, real estate developers, the farming community, water interests and other "stakeholders" in the siting area.

As the district's elected official, Carpenter also played an active role in the siting process. She focused her efforts on making sure the county was giving adequate information to citizens through the public meeting process, the media was kept informed and the public advisory committee was placed in the forefront of the process.

"The key was not to avoid a heated debate, but to understand that such debates are a part of the process," says Carpenter. "They allow people to vent their feelings and ultimately, down the road, to arrive at a consensus about a landfill site that is not only environmentally sound, but one that is socially acceptable."

The public appreciated the need for a new landfill, but opposed sites near individual homes and businesses, says Marty Rozelle of Dames & Moore, which served as the site selection consultant. Area residents also were concerned about the long-term effects of a landfill on property values, water quality, traffic congestion and the quality of life in their desert environs.

The goal was to find a suitable landfill to serve the area for 50 years. First, a regional inventory identified areas where a landfill would be appropriate. From an original list of 24 potential sites, seven locations were selected for further review. These sites were analyzed on the basis of specific site selection criteria identified by project staff and advisory committee members. Among the criteria were impacts on water quality, existing and future land uses, traffic congestion, air quality, user costs, and air quality.

Getting local people involved with the study proved to be the key, says Collins. "We weren't getting anywhere until we got people in the area involved in the study, and they started dealing with the issues. Through the public meetings, they learned about landfills, and they educated us about their neighborhoods and what was important to them."

After thorough consideration of all the siting criteria, advisory committee members and project staffers reached a consensus and recommended a 1,000-acre site near the town of Surprise. Two public hearings then were held to obtain public comments, with nearly all comments supporting the recommended site. In fact, when the County Board of Supervisors met to vote on the site, not one objection was raised from the estimated 150 people in attendance.

The public involvement process takes time, says Carpenter, but people should recognize "a year or so is not a long time to go through a successful process for siting and starting up a landfill." □

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tion systems to keep methane within landfills. But he sees continued interest in recovery systems, and says he is sure recovery will continue, and play an important role in paying for gas control equipment.

Tom Shuput, market services coordinator for GSF Energy Inc., says market conditions have forced a lowering of high-quality methane prices sold to gas companies, and a discounting of electrical rates to keep pace with the competition. When utilities are paying less for natural gas and for fuel to generate electricity, he says GSF must match or beat the prices. In California, prices paid for electricity have fallen from six cents per kilowatt hour to four cents, a 30 percent drop.

To make up for lower revenues, Shuput says many vendors are tightening royalties paid to landfill owners, who typically receive 10 to 20 percent of methane or electricity sales. Another step, Shuput says, is finding cheaper and more efficient ways of removing carbon dioxide and other impurities from landfill gas, creating a refined product with higher heating value.

GSF has installed the latest "pressure swing absorption" technology at a new plant in Cincinnati, using special pellets that absorb carbon dioxide as they are heated, then discharging the gas into separation vessels when cooled. The new system, according to Shuput, is somewhat less expensive, and an economy move necessary in today's marketplace.

Not all vendors are feeling the effects of lower energy prices. Some reap benefits from high-price contracts negotiated when energy markets boomed. Tony Henrich of Pacific Lighting Energy Systems says a 10-year contract will pay his firm up to seven-and-a-half cents per kilowatt hour. About 80 percent of the contract's cost basis is fixed, he says, and 20 percent is based on variables like avoided costs.

Ironically, issues key to the prosperity of the industry are those over which it has least control: fluctuating energy prices and impending pollution regulations. These factors have segmented the methane recovery market, analysts say, into a state-by-state patchwork in which "sometimes the numbers work and sometimes they don't," as one vendor says.

In some states, support is growing for mandatory control of trace toxins rising from landfill surfaces and containment of methane gases. Already, strict rules have become law in Southern California, geared toward keeping pollution inside landfills and away from residential areas. Wisconsin, Washington, and New Jersey also are considering rules and engineering designs to reduce pollution.

The move causing the most concern is the evaluation by the U.S. Environmental Protection Agency (EPA) of health risks posed by the 90 compounds that landfills emit in minute quantities. Among these are known carcinogens such as benzene and vinyl chloride. When studies are complete, EPA could issue regulations limiting emissions of one or more of these substances. Methane already is limited by EPA to 5 percent of air volume — its explosion threshold.

"People who design and operate landfills don't know enough about managing methane," says Phil O'Leary, an engineer with the University of Wisconsin. Calling the gas "unpredictable and dangerous," O'Leary says methane can find its way through seemingly impenetrable barriers and move hundreds of feet within hours.

O'Leary, who lives near the Green Hills landfill in Madison, is interested in landfill designs and operating practices to make them good neighbors. He says methane is likely to migrate underground if a capped landfill blocks its escape. "Methane will follow a path of least resistance," he says, "often along sand or gravel deposits in soils."

Methane can travel up to 1,000 feet and further with rainfall, dropping barometric pressure and frozen ground. Investigators of the explosion near the Green Hills landfill think rainfall may have played a role in forcing migrating methane into basements. And in Seattle, methane was discovered in the basements of homes as far as a half-mile from the Midway landfill.

Industry representatives tout "passive" and "active" methane collection systems they say pose solutions to the danger of methane moving from landfills. The systems use a series of deep wells that passively vent methane into air and dilute it, or pump the gas actively into collection systems for flaring. Sometimes, trenches filled with porous rock are used to help vent gas, or wells are installed at the landfill edge to vent or pump, preventing escaped fugitive gases.

> *"People who design and operate landfills don't know enough about managing methane."*

But the collection systems described by O'Leary can damage methane recovery plants if gases are pulled aggressively from the landfills. When gas is pumped out faster than bacteria can replenish the supply, outside air is pulled into the landfill. This condition can dilute the quality of methane recovered, and at worst, kill methane-producing bacteria deep in the landfill.

Using collection systems in tandem with recovery is becoming more common, observers say, because recovery systems alone cannot capture enough gas to eliminate danger of off-site migration. But Borgardus says the tandem systems are needed as backup to control gas during recovery downtime. She says the two systems can work well together if they are carefully designed.

Denny Clark worries about the safety of his children growing up near the Midway landfill, a Superfund site. Clark says an underground plume of methane and trace toxins has spread 100 feet from the fill when first detected in 1983 to a half-mile radius. Now, Clark says property values in the neighborhood of 1,000 homes have dropped and people are concerned.

Clark lauds Seattle for its aggressive efforts to solve problems with gas monitoring probes and wells installed around the neighborhood to vent methane into the air. Clark says the system is reducing methane levels in soils around homes, but wonders if traces of benzene and toluene being discharged from the ground with methane are safe. And when flares burning methane at the landfill collection system go out, Clark says "the neighborhood stinks."

"People should be aware of the consequences of landfills," he continues, pointing out that the Midway landfill started out as a model site, going awry when toxins were dumped there illegally. Now, he concludes, only continued safeguards will keep the dangers at bay.

In Southern California, where landfills encroach on residential zones more closely and commonly than anywhere, regulators have developed the nation's strictest limits on methane and hydrocarbon emissions.

Fred Lettice, supervising air quality engineer with the South Coast Air Quality Management District, says regulations are designed to limit gas emissions into air and ground. The program requires analysis of gases sampled from collection systems, landfill surfaces and perimeter gas probes. A key provision

Iron Topping Extends Floor Life

The San Mateo County, Calif., tipping-floor transfer station, believed to be the world's largest with 82,000 square feet, processes 1,500 tons of refuse per day. The indoor solid-waste transfer station, built for $15 million in 1984, was designed to replace several public dumps and is the central dumping site for residents of 10 cities.

The station also serves the needs of Browning-Ferris Industries (BFI), which built the facility. Waste is deposited at the San Mateo County "Scavenger" 14 hours a day, seven days a week.

The space is rotated between garbage trucks and private individuals. When a sufficient amount of waste is collected, front-end loaders push the material into four large slots in the floor, where tractor-trailer trucks are loaded with the debris, before hauling the waste to a dump site 20 miles away.

"We get everything here," says Lou Devincenzi, BFI president, "from soup to nuts — engine blocks, trees, glass, metals." The scraping of this debris across the floor contributes to the wear and tear of the surface. Repetitive traffic patterns of the front-end loaders, crawler treads, refuse dropped from route trucks and routine abrasion from the front-end loaders' blades put extreme demands on the floor surface. When planning the facility, Devincenzi says the floor was the most important consideration.

The station's designers specified Anvil-Top 200-1, an iron-aggregate metallic floor topping, manufactured by Master Builders. The topping was used on 30,000 square feet immediately surrounding the four loading slots. An iron-aggregate dry-shake floor hardener was used on the ramps, aprons and more remote areas where conditions were less severe.

As waste tonnage escalates and environmental constraints halt the use of outdoor dumps in favor of sanitary landfills and mass-burn operations, refuse facility floors will need to be more abrasion and impact resistant. Conventional concrete remains the least expensive base material to use for flooring, but a concrete surface rarely will withstand the common forces and demands required in the solid waste industry, say facility designers.

"The floor has been in place for 2½ years now," Devincenzi says, "and the floor topping has been our answer to the scraping of the floor. The material is very tough and resists the digging in and gouging out — the blades just skim over the top of the concrete. Without it, we would have replaced the floor probably twice already." ☐

limits hydrocarbons — methane and non-methane substances including trace toxins — to 500 parts per million (ppm), for "points" on the landfill and an average surface level of 50 ppm. Lettice says these strict rules are needed to protect the health of residents living near landfills, who might be harmed by long-term exposure to even tiny amounts of toxins.

Lanny Hickman, executive director of the GRCDA, is critical of South Coast pollution standards he terms unrealistic, saying they represent a "one-dimensional viewpoint."

New regulations will "require analyzing a whole array of chemicals at great expense," Hickman says, and methane gases will be diluted by aggressive collection systems. The solution is a balance of the economics of recovery with air pollution goals, he says.

Balance may indeed be a key survival strategy for an industry buffeted by tightening economics and demands on scarce resources by new regulations. If regulations are applied selectively and reasonably, as industry representatives hope, and the energy recession eases, then chances are good the industry will emerge from these troubled times leaner and meaner. But if economics and regulations combine to squeeze the industry for long, progress in methane and gas recovery could stall, or at worst, reverse. ☐

Bill Eldred is a principal planner with Louis Berger and Associates, consulting engineers, East Orange, N.J.

Emissions Studied

The effects of emissions on the agricultural community normally are not a part of the permitting process for a waste-to-energy facility, but the $110-million Stanislaus County facility, located near Modesto, Calif., made such a study necessary.

The San Joaquin Valley is one of the richest agricultural regions in the country, and citizens and governmental officials wanted to know the impact of the facility's operations on crops.

Timing of the environmental reports was crucial, since the project sponsors had to meet specific deadlines to take advantage of available funding and escrow financing. The reports, which can take up to three years to complete, were finished in nine months. Included were the environmental impact report, health risk assessment, new source review, prevention of significant deterioration and other environmental permits.

A study by Radian Corp. predicted the emissions within 15 miles of the proposed plant, and estimated the absorption level for plants, water and soil, as well as by animals and people. From the findings, the Stanislaus County Air Pollution Control District and local health officials concluded the health risk was within acceptable limits and approved the facility's construction.

The facility, a joint venture of Stanislaus County, Modesto and Ogden Martin Systems, will be completed in early 1988 and will convert 800 tons of refuse per day into 15 megawatts of electricity, equivalent to the annual electrical consumption of 7,000 homes. ☐

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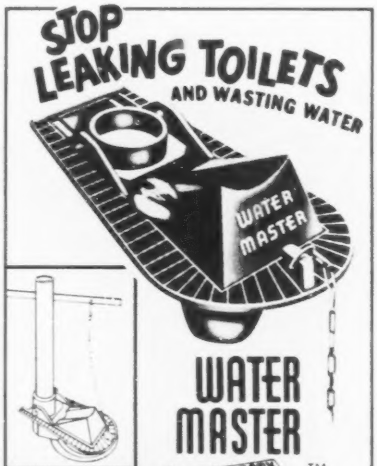

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MUNICIPAL COST INDEXES

The **Municipal Cost Index** for December rose one point from last month, leveling at 340.7. This represents a nearly five-point climb from last year's figure of 336.0. The **Construction Cost Index** also rose from November, climbing slightly to 379.2. The **Consumer Price Index** jumped to 330.2, a rise of almost two points, and the **Producer Price Index**, while down almost 10 points from last year's figure, climbed slightly to 297.7.

THIS MONTH'S MARKETBASKET

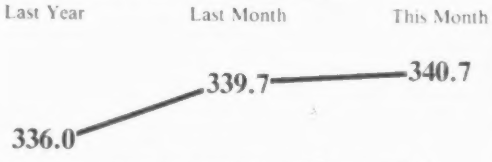
	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.2	0	1.3
Apparel	185.4	.1	1.3
Asphalt Roofing	385.8	−.4	−5.1
Books	140.3	.4	4.8
Chemicals, Industrial	315.3	.1	−7.9
Coal	538.0	0	−2.0
Concrete Products	324.9	0	.6
Construction Machinery	366.9	−.1	1.1
Diesel Fuel	360.7	18.7	−42.5
Electric Components	202.9	.2	2.7
Electric Lamps	344.8	−1.0	−.6
Electric Power	467.2	0	1.1
Engines, I.C.	353.8	−.1	1.7
Fans, Blowers	365.8	.1	1.7
Fertilizers, Mixed	249.6	−1.1	−3.4
Floor Coverings	193.8	−.2	1.7
Flow Instruments	237.4	.4	2.3
Footwear	261.9	−.1	1.2
Foundry Products	361.7	−.1	−.6
Fuel Oil No. 2	393.7	11.4	−41.4
Furniture	318.4	.1	2.1
Gasoline	338.6	9.0	−39.8
Generator Sets	353.5	.1	.6
Glass	232.5	−.7	2.6
Glass Containers	400.8	.2	3.6
Gypsum Products	338.4	−1.6	2.2
Hardware	306.0	−.3	−.2
Heating Equipment	271.3	.9	3.7
HVAC Controls	128.0	−.8	1.1
LP Gas	290.9	−2.0	−44.6
Lubricants	358.3	−2.0	−2.7
Lumber	312.1	.1	3.0
Metal Fabrications	317.2	0	.7
Millwork	322.1	.1	2.7
Motor Vehicle Parts	357.9	.0	.4
Mowers	263.4	−.3	.7
Natural Gas	1129.3	−2.5	−17.0
Office Machines	154.4	−.1	.5
Paint	282.4	0	1.9
Paper	308.9	.5	1.7
Passenger Cars	223.1	−4.0	6.4
Plumbing Fixtures	324.8	.7	3.5
Plywood	235.6	1.0	2.3
Portland Cement	349.7	.1	−2.5
Residual Fuel	417.6	15.7	−53.1
Sand, Gravel	319.5	0	3.1
Sanitary Papers	383.6	.1	1.2
Soaps, Detergents	270.9	−.5	−1.4
Sporting Goods	208.1	.3	1.9
Steel Mill Products	350.1	.2	−4.1
Struc. Clay Products	311.0	.9	4.2
Switchgear	286.9	.1	1.7
Tires, Tubes	234.0	.2	−1.0
Transformers	234.1	.1	.4
Trucks	335.2	−3.7	5.8
Valves	107.1	.2	1.6
Wire, Cable	205.6	.1	−.3
Wiring Devices	379.1	1.1	4.4

In this month's marketbasket, products in the fuel and oil family continued slight gains made during the past two months, but are still down 40 to 50 percent from last year. Electrical components also posted gains in December, while passenger cars and trucks showed losses.

— Compiled by Joe Morris

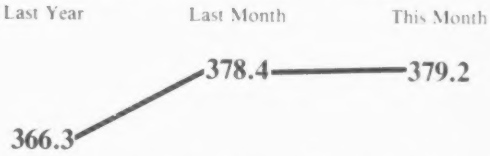
At-A-Glance Changes

MUNICIPAL COST INDEX



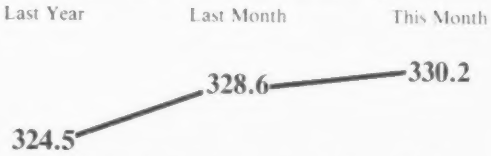
Percent Change From Last: Month **.3** Year **1.4**

CONSTRUCTION COST INDEX



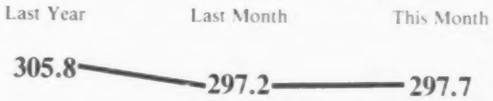
Percent Change From Last: Month **.2** Year **3.5**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.5** Year **1.8**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.2** Year **−2.6**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	611.6B	.5	6.9
Federal Grants	106.9B	3.3	8.7
Durable Purchases	22.4B	2.3	9.3
Consumables	36.7B	−5.2	−4.4
Services	372.0B	1.8	7.8
Structures	62.1B	12.9	14.6
Salaries, Wages	297.8B	1.7	7.2
Surplus	59.0B	−15.7	−.3
Employment	13.770M	.1	1.1

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Improving Roads With Geotextiles

Special Snow Removal Survey
Page 17

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January 1987 Vol. 102, No. 1

AWARD 6 **Charleston Mayor Earns Award**
Mayor Joseph Riley Jr. was presented with *American City & County's* Leadership in Local Government Award at the National League of Cities Congress.

SPECIAL REPORT 26 **Highway Fund Assigned High Priority**
When Congress reconvenes this month, the highway reauthorization bill is expected to be given top priority.

COVER STORY 28 **Improving Roads With Geotextiles**
Cover photo by Double Vision, Atlanta
Using fabrics in street and highway construction has become commonplace. ☐ **33** Technology Transfer Program Expands ☐ **34** Change Is Sweeping City Street Cleaning ☐ **35** First Vacuum Sweeper Retired in Georgia ☐ **37** Product Review: Streets and Highways

SECURITY SYSTEMS 42 **Wireless Systems Enhance Security**
With phone line costs escalating, communities are opting for wireless communication systems for building security and public works purposes. ☐ **44** Access Control System Increases Revenues

FINANCIAL 46 **Is the Cavalry on the Horizon?**
The privatization of public projects is providing a needed financial resource for local governments. ☐ **48** The Case Against Privatization

SOFTWARE 52 **Software Goes Public**
Specific software programs designed for municipal use are creating a valuable middle ground between off-the-shelf software and user-created programs. ☐ **54** Delray Beach Contracts Boost Computer Life

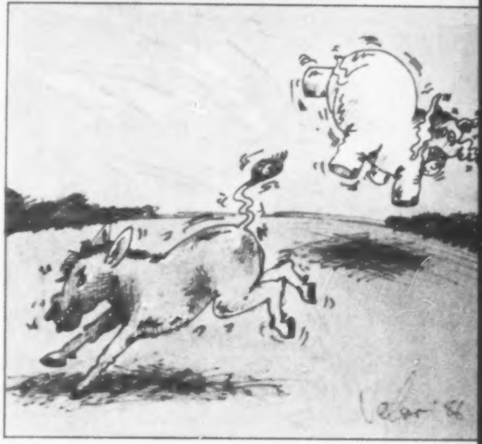
REVIEW & FORECAST 60 **Looking Back, Looking Ahead**
Federal tax changes coupled with pullout of aid to local governments are only one cause of the uncertainty for 1987. ☐ **60** New Ideas, Courage Necessary To Cope ☐ **62** Changing Roles Add Pressures ☐ **62** There Is Light at End of Tunnel ☐ **63** Contract Services Can Extend Budget

COLUMNS 10 **Office Automation** . . . A survey of public sector managers indicates vendors must be more responsive to needs.

14 **Inside Washington** . . . The 100th Congress, with the Senate firmly in Democratic control, is confronted with the same old problems.

20 **Financial Management** . . . Guaranteed interest contracts can help pension plan managers reduce financial risks.

42 Wireless Security



14 Democrats Take Over

DEPARTMENTS

22 Across America
19 Calendar
73 Classified
4 Editor's View
69 Literature
76 Municipal Cost Indexes
64 New Products
12 Newsmakers
70 Professional Services
63 Services & Contracts

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Software Goes Public

Specific software programs designed for municipal use are creating a valuable middle ground between off-the-shelf software and user-created programs.

By Joe Morris, Assistant Editor

Fort Collins, Colo., had a problem a few years ago. The city's Engineering Department wanted to automate some administrative and engineering functions, but was unable to purchase a software program tailored to the city's specific needs. Eventually, the department wrote programs for administrative and budget-tracking applications, programs tailored to suit the department's needs, says Jay Kole, special projects administrator.

"We know exactly what we need," Kole says, "and I'm not sure if anyone else understands that."

This year, however, Kole's department was able to purchase a pavement management system written specifically for the city. Ready-made systems are available for such applications, but Fort Collins chose a system written by a vendor, Kole says.

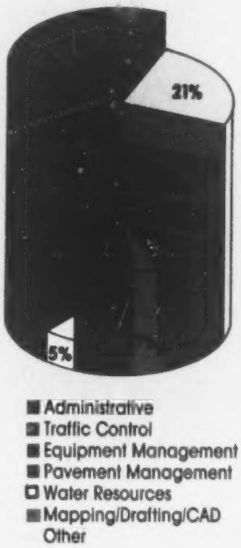
"There are pavement management systems available off the shelf, but we got a vendor-written one," he says. "Sometimes in the past, databases weren't quite right, but now more specific programs are available."

This shift in availability signals a change in the software industry. While user-ready packages have been available for years, vendors now are tailoring specific software packages for users. In tandem with this effort, many vendors are pursuing public dollars actively. Marketing strategies are being geared toward the municipal market, and specifically, public works.

"We had the option of creating another in-house program, but we were able to get the vendor to modify their pavement management program to suit our needs, so we purchased it," Kole says.

In Holyoke, Mass., the Public Works Department wrote the software for its street inventory and fleet maintenance functions in-house, says Craig Dolan, public works director. "We did the programs in-house because we had a strong notion of what we needed to have," he says, "and we had a programmer who was ready, willing and able to do the work at a modest price."

Software Applications *



*Based on a 1986 survey from the American Public Works Association.

But Dolan adds that Holyoke's programs were written in 1982, before the boom in local government software began. "If we were approached now, I'd certainly be willing to look at what someone had to offer. We were just ahead of the game."

In fact, the city has installed a vendor-purchased program in its wastewater treatment plant, a program operated independently from the Public Works Department's computer.

"We were looking for someone else's program for the wastewater treatment plant," Dolan says, "because we thought self-designing might not have served our best interests in this instance." Although the program cost "substantially more" than the programs written in-house, Dolan says he is happy with both groups of software.

As prices on equipment and software packages drop, vendors are not the only ones pursuing the municipal market. Recently, the American Public Works Association got into the act, aiding in the creation of a pavement management program called PAVER. Several municipalities contributed funds for the software's creation, and along with the APWA, control the rights to the software. The package is then, in turn, sold to municipalities nationwide.

Pavement management, wastewater treatment and vehicle maintenance are just a few examples of software programs available to public works departments today. And, with more vendors appearing on the marketplace, the range of options is likely to grow.

While computers in public works departments are not an uncommon sight, equipment displaying graphic maps of city streets and making recommendations on repair schedules is somewhat unusual. Innovative new software, however, coupled with state-of-the-art equipment, is making such pictures commonplace in municipalities around the country.

Although software packages handling administrative drudgery such as billing, filing and record-keeping have become standard, municipalities have been slow to delve into other automation functions. But, with increasing computer capabilities, as well as a growing understanding of the basic equipment, cities and counties are experimenting with public works programming at an exceptionally high rate.

Why the sudden abundance of public works software? "We're being looked at as a new market," says Ronald Ford, public works director of Concord, N.H. "The public sector is sometimes the last to be hit for certain improvements. The private sector is probably saturated, and now vendors are coming into the public sector."

Concord, like most smaller cities, does not have a heavily automated public works department. Equipment prices are dropping, however, and as more software becomes available, smaller municipalities are finding themselves in the computer business. As more smaller cities are able financially to move into the computer market, vendors are scrambling for their piece of the software market pie.

Dropping costs

"In some areas, there has been a demonstration that computers are becoming more viable, depending on the numbers and the end result," Ford says. "Smaller municipalities are coming into the market now — we can remember horrendous costs for equipment, but competition is lowering the price."

"Because many of the newer programs can be performed on PCs as well as mainframes," says Delilah Libby, administrative and fiscal manager for the Tampa, Fla., Department of Public Works, "we're seeing more small governments being able to afford programs."

"Computerization and software have lost the stigma of being something just for the largest municipalities," says Mary Ball, marketing practices consultant for Digital Systems Inc. "And as more municipalities automate, they want more than just meat and potatoes administrative systems."

"It's an amazing phenomenon," adds

Delray Beach Contracts Boost Computer Life

By Richard Fixel

Palm Beach County, Fla., was interested in a full-service, onsite microcomputer maintenance program. The county's cooperative purchasing group solicited bid quotations from 21 vendors, including six national companies. After viewing all bid proposals and meeting with the top four bidders, an award was made representing a 50 percent cost savings. Initially, the award was not supported by all group members, since some had to honor existing contracts.

Each member derived additional benefits that varied according to their operational procedures. Delray Beach, a member of the purchasing group, realized an $8,000 to $11,000 savings during the program's first year. In addition, the full-service maintenance contract enabled the city to save the cost of developing its own in-house microcomputer maintenance program, which had a projected cost of $76,800 per year.

In the invitation to bid, the purchasing group wanted two issues addressed. One, how would bidders be able to respond to the invitaton to bid if the group was unable to provide a complete equipment list? And second, conditions and standards would have to be formed to specify vendor responsibilities, minimize downtime and provide an ongoing review of services throughout the contract period.

A master list by customer location for all PCs, which included CPUs, internal boards and peripheral equipment, could not be provided by group members. Several members explained they could not provide a detailed list since there were board and memory transfers between PCs, and additions and deletions to the PCs, which had occurred undetected by the Data Processing and Purchasing departments.

Since developing a master list would be economically prohibitive, an alternative approach was adopted. First, the invitation to bid would include a PC demographic list, and a master list of 400 component line items by manufacturer. The list would reflect the most common computer parts found throughout the group's systems.

By reviewing PC demographics and working with the parts lists, bidders would be able to plan staffing patterns, project parts inventory levels, and price out charges for the component part lists. In order to determine the maintenance costs for each work station, the bidders were asked to quote a flat rate for survey and cleaning all equipment, and provide each member with a PC location list reflecting annual maintenance costs. Maintenance costs would be based on integrating the component price list with survey findings. By using a component parts list, members could add, transfer, or delete components throughout the contract year at a pro-rated price.

To determine which bidder could best meet individual and collective needs, a list of conditions and standards was established. The list specified that the vendor must demonstrate all technicians had completed the IBM training school or equivalent successfully; agree all service would be performed by staff whose names and credentials had been submitted to the group; identify the staffing pattern; guarantee a response time to service calls; assure service technicians were to survey and clean equipment; and instruct two operators how to perform diagnostic tests. Other requirements of the contract covered areas such as replacement parts, annual cleaning, loaner units, warranty equipment, and semi-annual and annual reports.

Each member of the group is responsible for monitoring its own program. Reports and the dialogue between vendor and customer were designed to identify and resolve operational problems that may arise. The service report would indicate the frequency of calls per PC, and what steps the technician took to resolve the problem. If a reoccuring problem fell outside the maintenance program guidelines, a dialogue between vendor and customer would determine what steps needed to be taken. Documented service reports and open communication between the customer and the vendor would minimize down time and the frequency of service calls. ☐

Richard Fixel is the purchasing administrator for Delray Beach, Fla.

David Sonnen, national marketing director for Deltasystems. "Equipment is becoming cheaper and cheaper and its capabilities are increasing at an inverse rate."

"A city of 30,000 to 85,000 people can get into the business with full-blown capacities for between $80,000 and $85,000," Sonnen adds. "That price usually includes all software and hardware."

Vendors also are finding, as more areas of the country become computer literate, that buyers no longer are settling for off-the-shelf, industry-standard software packages. City workers are learning more about the capabilities of the equipment they possess, and how to make software programs more germane to their needs.

"A lot of municipalities have learned to shop around and to see how much companies are willing to modify their packages," Ball says. "It takes more initiative on our part to support a customized system in a municipality than if the system was just plain vanilla."

But, Ball adds, vendors are dealing with specific demands from buyers, and are working to make systems easily adaptable to specific local needs.

"Municipalities are becoming more educated about what is available," she says. "People used to think software would have to be custom-made, then there was a period when the software would come directly off the shelf. Now we have both — we have systems available best-suited to specific needs, and the ability to customize a system as well."

> *"Sometimes in the past, databases weren't quite right, but now specific programs are available."*

Some municipalities prefer to customize their own systems, or operate purely off the shelf. In Tampa, Libby says one bad experience with modification has steered the city toward more main-line software.

"Once before, we bought a program and had it modified," she says. "But we had a lot of problems with it following the modification." The city currently is seeking to replace its fleet maintenance software, and when a decision is made, Libby says the chosen system will see little changes.

"We'll stick to what we have, or choose something that does not have to be modified substantially," she says. "We want to be able to pull the software off the shelf, have it meet 70 to 80 percent of our needs, and then negotiate modifications for the rest."

Modification, while more readily available now than ever, may still not be chosen due to economic reasons. According to Libby, "The vendors are always willing to modify, but the cost may or may not be prohibitive."

Despite possible costs in implementation and modification, there are nonetheless more choices than ever for public works officials finding themselves in the midst of the software jungle. As competition between manufacturers and vendors grows, prices should drop, while variety should rise.

All this means good news for public works departments beleaguered by budget cuts and rising labor and equipment costs. As specific programs for computer-aided mapping, street maintenance and vehicle management become available, department heads are able to reduce staff and raise productivity from an initial investment.

"Five years ago, the public works market didn't exist," says R.C. Smith, vice president of Public Works Software Inc. "But the curve is getting steeper for specific departmental requirements for public works."

Smith, whose company currently is marketing a system handling computerized pavement management, says there are few applications specialized for public works that are functional and practical to implement, but the market is viable for vendors with those systems. And as prices of equipment decrease, he says the market will continue to open up.

"There's a threshold that will not be penetrated," he says. "The market has limited size, which is a drawback. It costs more time to develop a highly specialized package for this vertical market, but the market is small."

Despite the market's estimated boundaries, many vendors are continuing to pursue municipal dollars. City and county officials are being inundated with offers from companies marketing new, improved packages.

"I'm starting to see advertising for more specific programs," says Fort Collins' Kole, "and more vendors are trying to sell the newer software."

Differences on CAD

Despite the immense popularity of CAD (computer-aided design) systems, vendors say they are staying away from such expensive items. Although these systems greatly reduce workload, they often are expensive and out of reach for smaller communities.

"We look at cities and counties by

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population," Smith says. "Most of them are small, so CAD and other expensive systems are beyond them from a cost standpoint." Ten to 20 percent of U.S. cities will be large enough to gravitate into that area, he adds, but "most municipal assets in the United States are managed by small cities. Vendors who help the larger population will do the greater service."

Still, CAD systems retain enormous popularity, both for their mapping functions and, in some instances, their ability to interface with computers in other municipalities.

"CAD has been around a long time, and is still improving," Sonnen says. "There are also geographic information systems now, which can tie into other databases. If one map has the location of all city storm sewers, then these systems can tie into other data about segments of a sewer line, the maker of the sewage pipe, even the date installed."

Such systems are expensive, however, and most municipalities are in the business of stretching dollars as far as possible. For that reason, one of the most important aspects of the new systems is their relatively low cost. Most run from $5,000 to $20,000, according to manufacturers, and come with a variety of additional perks.

Systems dealing with roadway maintenance and repair, for example, can do much to lower municipal maintenance and construction costs. Vendors, realizing this, are playing up the various assets of their programs.

> *With more vendors appearing on the marketplace, software options are likely to grow.*

"Packages are more specialized now, more than just a generic package," Smith says. "They range from $5,000 to $20,000, and are more and more user-specific." In an effort to secure as much business as possible, manufacturers and vendors seek as much technical advice as possible when creating systems. A pavement management system from Smith's company features "15 years' worth of engineering expertise built into the system," as well as a user manual describing both the system itself and the knowledge behind its creation.

As vendors move from proven areas of need, such as CAD systems and pavement management, to newer software ideas, such as geographic databases, municipalities will have unprecedented opportunities to stretch their computer muscle.

The continuing partnership between vendors, manufacturers and municipal users also will aid the software industry's growth in the local government market. Although hesitant to give exact numbers, vendors predict that within a few years most municipalities will be using some form of computer and specific software in their public works departments. Given the time- and cost-saving advantages of such computerization, that prediction means good news for cities and counties beleaguered by budget cuts and rising local taxes. ☐

For Information

For more information on software products discussed in the article, contact the following vendors:

Deltasystems: David Sonnen, National Marketing Director, 2629 Redwing Road, Suite 330, Fort Collins, Colo. 80526.

Public Works Software Inc., R.C. Smith, President, P.O. Box 11444, Newington, Conn. 06111.

Digital Systems Inc., Mary Ball, Marketing Practices Consultant, (803) 799-4094.

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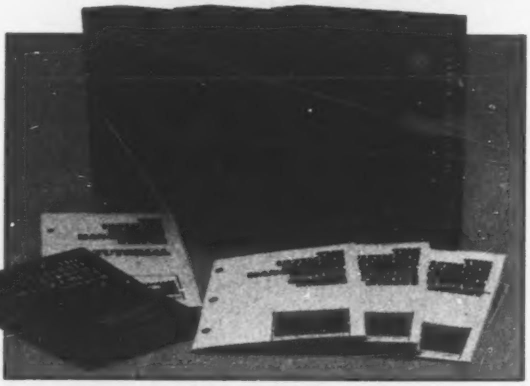

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THE ENFORCER™

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MUNICIPAL COST INDEXES

The **Municipal Cost Index** for January rose slightly, peaking at 340.9. The **Construction Cost Index**, however, decreased for the first time in several months, dropping two-tenths of a point to 379.0. The **Consumer Price Index** continued its slow rise, leveling at 330.5, and the **Producer Price Index** rose six-tenths of a point to 298.3.

In this month's marketbasket, most products showed little fluctuation. Prices in the fuel and oil family continued to decline, but most products remained stable. Gaining ground in January were passenger cars, trucks and wiring devices.

— Compiled by Joe Morris

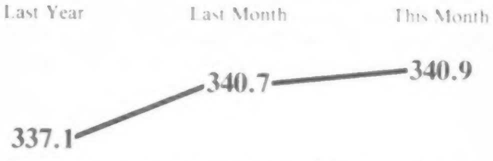
These figures are calculated on a base year of 1967.

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.3	.1	1.4
Apparel	185.4	0	1.2
Asphalt Roofing	377.8	−2.1	−6.7
Books	142.0	1.2	4.6
Chemicals, Industrial	317.5	.7	−6.1
Coal	536.5	−.3	−1.3
Concrete Products	324.3	−.2	.4
Construction Machinery	367.1	.1	1.1
Diesel Fuel	335.1	−7.1	−49.1
Electric Components	203.3	.2	2.9
Electric Lamps	347.5	.8	−.1
Electric Power	451.7	−3.3	−.8
Engines, I.C.	353.9	0	2.1
Fans, Blowers	365.9	0	1.7
Fertilizers, Mixed	247.0	−1.0	−3.9
Floor Coverings	195.9	1.1	3.1
Flow Instruments	237.3	0	1.9
Footwear	263.5	.6	1.7
Foundry Products	361.7	0	−.7
Fuel Oil No. 2	367.1	−6.8	−48.0
Furniture	320.7	.7	3.1
Gasoline	310.9	−8.2	−43.9
Generator Sets	352.5	−.3	.3
Glass	232.7	.1	2.0
Glass Containers	400.8	0	3.2
Gypsum Products	341.9	1.0	.6
Hardware	306.6	.2	−.2
Heating Equipment	271.9	.2	4.0
HVAC Controls	129.9	1.5	2.9
LP Gas	311.7	7.2	−42.1
Lubricants	356.7	−.4	−5.1
Lumber	313.8	.5	4.2
Metal Fabrications	316.1	−.3	.2
Millwork	319.7	−.7	2.2
Motor Vehicle Parts	357.7	−.1	.4
Mowers	263.6	.1	.8
Natural Gas	1114.2	−1.3	−17.9
Office Machines	154.7	.2	.7
Paint	282.4	0	1.7
Paper	310.5	.5	3.2
Passenger Cars	249.8	12.0	6.5
Plumbing Fixtures	325.6	.2	3.4
Plywood	236.4	.3	1.0
Portland Cement	352.3	.7	−1.3
Residual Fuel	452.1	8.3	−48.9
Sand, Gravel	318.8	−2.0	2.7
Sanitary Papers	383.6	0	.8
Soaps, Detergents	273.5	1.0	−.7
Sporting Goods	208.0	0	1.8
Steel Mill Products	351.0	.3	−4.0
Struc. Clay Products	312.1	.4	4.4
Switchgear	286.1	−.3	1.0
Tires, Tubes	234.0	0	−.7
Transformers	233.6	−.2	.3
Trucks	348.1	3.8	3.8
Valves	107.4	.3	2.1
Wire, Cable	205.5	0	−.1
Wiring Devices	378.2	4.2	−.2

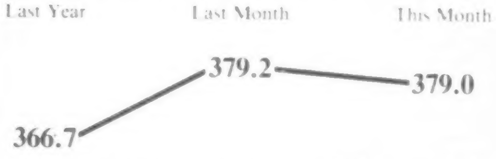
At-A-Glance Changes

MUNICIPAL COST INDEX



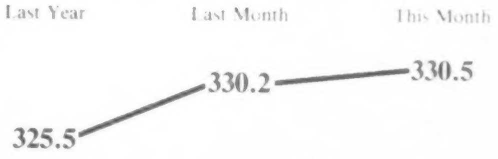
Percent Change From Last: Month **.06** Year **1.1**

CONSTRUCTION COST INDEX



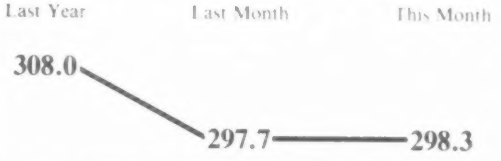
Percent Change From Last: Month **− 0.5** Year **3.4**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.09** Year **1.5**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.2** Year **− 3.1**

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	611.6B	.5	6.9
Federal Grants	106.1B	−.7	5.9
Durable Purchases	22.8B	1.8	9.1
Consumables	36.6B	−.3	−5.4
Services	378.9B	1.9	7.8
Structures	66.4B	6.9	15.9
Salaries, Wages	302.9B	1.7	7.1
Surplus	59.0B	−15.7	−.3
Employment	13.711M	−.2	.5

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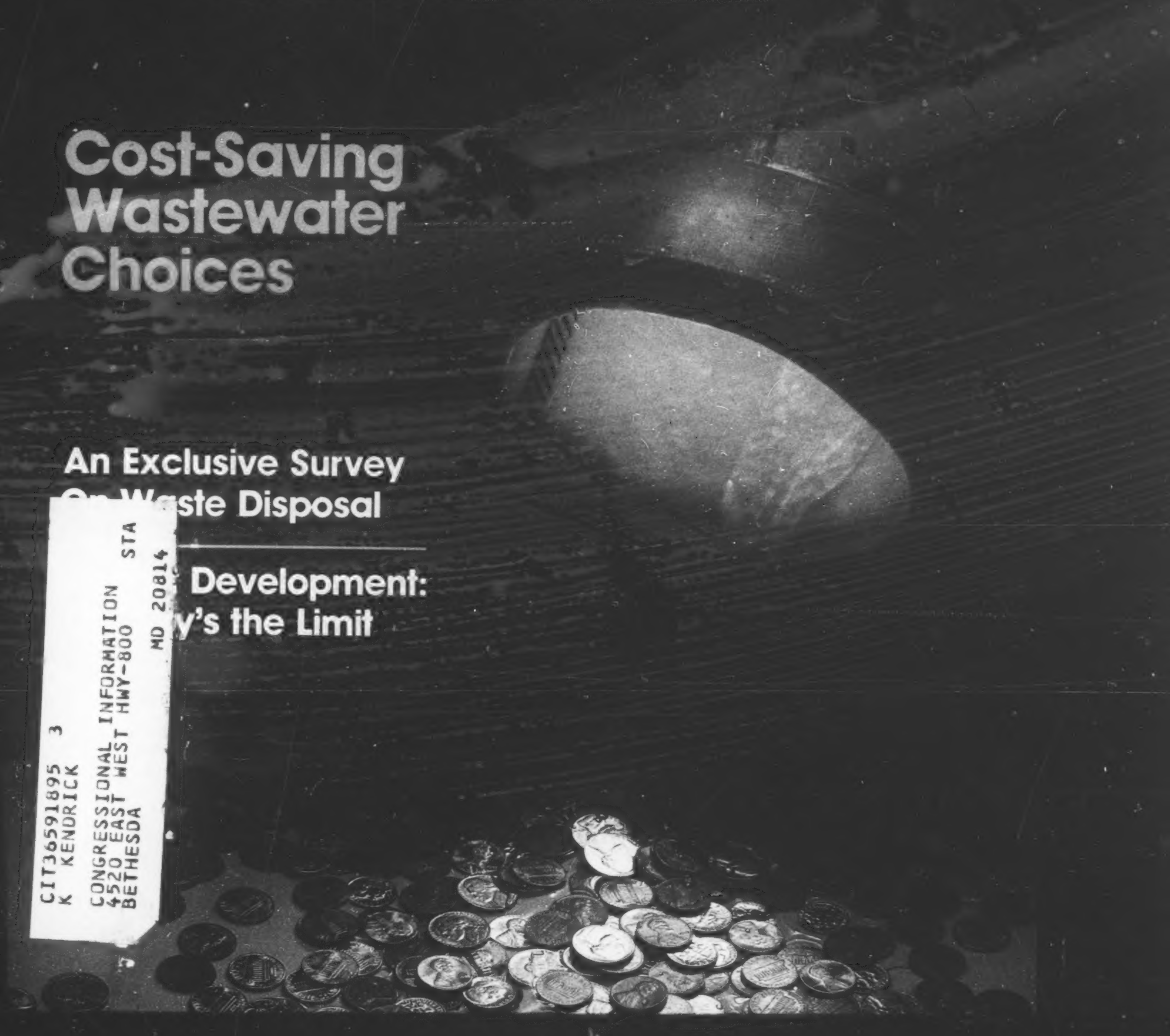

Cost-Saving Wastewater Choices

An Exclusive Survey
On Waste Disposal

Development:
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VBPA

February 1987 Vol. 102, No. 2

SPECIAL REPORT

26 1987 Census of Governments To Provide Important Data
Poll of 82,000 local government units, including 19,000 municipalities, will provide comparison information and help target future needs.

COVER STORY

28 Using Cost-Effective Wastewater Options
Cover photograph by Terri Teague, Atlanta
New alternatives are allowing municipalities to recover costs and maintain environmentally safe facilities. ☐ **30** Twin Falls Corrects Treatment Problems ☐ **32** Wichita Saves $300,000 With Sewer Rehabilitation ☐ **34** Water/Wastewater Outlays To Reach $16B ☐ **37** Wastewater Rates Rising As Requirements Increase ☐ **38** Privatization Working in Auburn ☐ **39** Sewer Mini-Projects Succeed in Lexington ☐ **40** Product Review: Wastewater Systems

SOLID WASTES

42 Waste Disposal Issues Surveyed
In an exclusive Delphi poll, solid waste authorities confront such major issues as dioxins, landfills and resource recovery. ☐ **46** Cobb County Reduces Litter With Cooperative Campaign ☐ **50** Help Is Available for Chemical Queries

AIRPORTS

54 Economic Development: The Sky's the Limit
Communities are recognizing the growing importance of airports in attracting people and businesses, and improving the local economy. ☐ **56** Mobile Builds New Terminal

COLUMNS

10 Inside Washington . . . Federal stormwater permitting requirements will be eased, but not disappear.
12 Financial Management . . . Private sector can offer assistance in collecting delinquent bills.
14 Office Automation . . . Health care claims cost reduced with in-house processing.

54 Airport Development

10 Stormwater Runoff

DEPARTMENTS

19 Across America
6 Calendar
75 Classified
4 Editor's View
71 Literature
78 Municipal Cost Indexes
66 New Products
8 Newsmakers
72 Professional Services
70 Services & Contracts

Contributing to this month's cover was Insituform of North America, Memphis, Tenn., which provided the sewer pipe with Insituform lining. Also, Combustion Engineering, Stamford, Conn., provided the refuse-derived fuel used for the December cover.

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Poverty on the Rise, City Survey Reveals

Poverty-related problems, including hunger, homelessness and a lack of low-income housing, continued to grow in 1986, and cities' emergency assistance for those in need fell far short of the demand, according to a 25-city survey from the U.S. Conference of Mayors' Task Force on Hunger and Homelessness.

More than two-thirds of the survey cities reported the number of poor people increased during 1986, with five saying the number remained unchanged and two reporting decreases in poverty. While more than 60 percent of the cities said they had benefited from the nation's economic recovery, nearly nine out of 10 said the recovery had not helped the hungry, the homeless or other low-income residents.

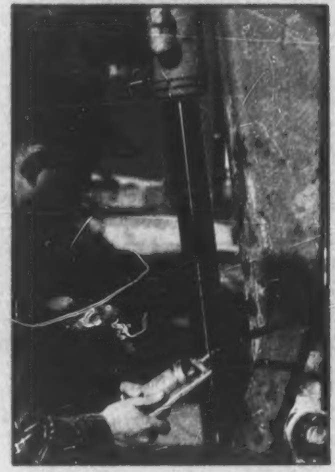
In all but one of the cities, the demand for emergency shelter increased during 1986, with the average increase being 20 percent. On average, the survey says 24 percent of the demand for shelter went unmet, and facilities in 72 percent of the cities turned away people in need because of a lack of resources.

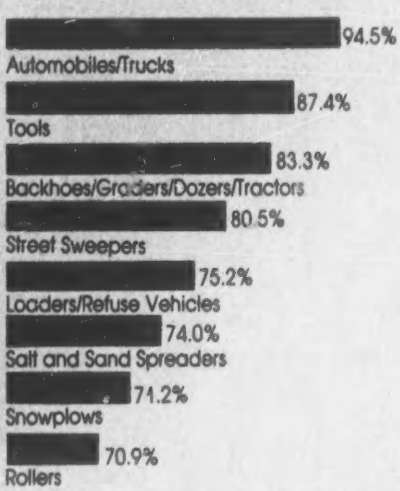
The housing crunch for low-income residents also is on the rise. The demand for assisted housing increased by an average of 40 percent in all but three cities surveyed. In the other three cities, demand remained the same. The average waiting list for assisted housing is 18 months, with the waiting lists closed in two of three cities polled. Less than one-third of the eligible low-income households are being served by assisted housing programs in the 25 cities.

The survey results were announced by Boston Mayor Raymond Flynn, who chairs the task force, and Charleston, S.C., Mayor Joseph Riley Jr., president of the Conference of Mayors. Flynn says if the administration will not help cities provide the services needed, "it is Congress' responsibility to put hunger, homelessness and poverty on its domestic agenda."

Fleet Maintenance/Management

In a recent survey, *American City & County* readers were asked their responsibility in purchasing new vehicles and fleet maintenance/management equipment. A total of 180 public works directors and city managers took part in this national sampling.





Equipment Sales To Remain Steady

North American unit sales of construction equipment will remain relatively stable throughout 1987, maintaining the industry's modest recovery that began in 1983, says John Gleason, JI Case senior vice president, sales and marketing, North America.

Overall sales for 1986 will be up 2 percent over the 84,581 units sold industry-wide in North America during 1985. (Construction equipment unit sales include industrial wheel tractors, crawler dozers and loaders under 160 hp, wheel loaders under 250 hp, skid-steer loaders, excavators, and trenchers.) And although 1987 unit sales are expected to decline slightly, Gleason says the decline will be less severe than the recession of 1980-82.

CONEXPO '87 Opens in Las Vegas

Construction machinery, accessories, technology and methods will be displayed at the International Construction Equipment Exposition, CONEXPO '87, the once-every-six-year construction equipment exposition, on Feb. 21-26 in Las Vegas, Nev., sponsored by the Construction Industry Manufacturers' Association.

For the first time in the 78-year history of CONEXPO, 36 seminars covering technical subjects, general management information for both contracting and equipment distributors, and marketing and personal development will be offered. Additionally, 30,000 tons of machines and accessories from 280 exhibitors will fill the 900,000-square-foot exposition. For more information, contact Fensholt Inc., 555 Waters Edge Drive, Oak Creek Center, Lombard, Ill. 60148, (312) 953-2300. ☐

Public works construction, such as highway and bridge repair, sewer and water lines, and other environmental projects, should remain at or near current levels in 1987, despite federal and state budget cutting, Gleason says.

The 1986 industry growth leaders were excavators and skid-steers. Gleason reports excavator sales industry-wide will be up 16 percent over 1985's record 7,066 units because of the intense price competition that has made excavators attractive alternatives to large loader/backhoes and has stimulated demand for smaller units. Skid-steer loader sales are expected to increase 6 percent over 1985 levels because of the strength of the housing and non-residential construction markets, and a strong livestock industry, Gleason concludes.

Diverse Activities Mark Engineers Week

Hundreds of activities are scheduled for Feb. 22-28 to celebrate the 37th National Engineers Week, initiated by the National Society of Professional Engineers. The theme, "Engineers: Turning Ideas into Real-

Wastewater Rates Rising As Requirements Increase

With increased environmental and economic attention focused on the wastewater industry, the cost of providing service has increased dramatically during the past decade. The rising costs have translated into much higher user charges to the utility's customers.

Wastewater user charges, which at one time drew little attention from residential and nonresidential customers, have become a more significant part of the customer's budget. In many communities, rates have doubled or tripled due to several factors influencing pricing: upgraded and more sophisticated treatment systems requiring increased operation and maintenance costs; inflation that has made a more significant impact on commodities and services affecting utility operations (chemicals, electricity, salaries, etc.); and requirements to staff treatment operations with more qualified managers and operators.

Water/Wastewater Training Program

Public Administration Workshops (PAW) has produced *The Skills to Manage for the Water and Wastewater Professional,* a management training program for public agency personnel. The 12-lesson program discusses motivation, discipline, delegation, negotiation, communication, hiring, firing, time management and financial management. The training program is available for $89 plus tax and shipping from PAW, P.O. Box 803, Kingsburg, Calif. 93631. ☐

As a result of these and other factors, politicians and utility managers have been forced to examine more carefully wastewater user charges and pricing affecting their communities. These are the primary conclusions gleaned from a recently conducted national survey by Arthur Young and Co. of wastewater departments throughout the country to determine their rate structures and how those structures are created. This survey targeted the major sewer utilities serving the central cities of the 100 largest metropolitan statistical areas in the United States. A comparison of rates for 20 communities are reviewed in the chart below.

Comparing rates among communities can provide insight into utility pricing policies, survey analysts say, but care should be taken in drawing conclusions from this comparison. High rates may not mean the utilities are operated and managed poorly. Many factors affect the costs to be recovered and the pricing structure. Some of the most prevalent factors are geographic location, demand, level of treatment, level of general fund subsidization, level of grant funding, age of system, customer constituency, infiltration and inflow problems, and rate-setting methodology.

Geographic location and topography significantly affect the design, cost and operation of wastewater facilities. In

1986 National Wastewater Rate Survey

	⅝ Inch Meter				2 Inch Meter	4 Inch Meter	8 Inch Meter
Cities	**0 Cubic Feet (0 Gallons)**	**500 Cubic Feet (3,470 Gallons)**	**1,000 Cubic Feet (7,480 Gallons)**	**3,000 Cubic Feet (22,440 Gallons)**	**50,000 Cubic Feet (374,000 Gallons)**	**1,000,000 Cubic Feet (7,480,000 Gallons)**	**1,500,000 Cubic Feet (11,220,000 Gallons)**
• Atlanta	$ 0.00	$ 6.00	$12.00	$36.00	$ 600.00	$12,000.00	$18,000.00
• Baltimore	3.31	8.27	13.23	37.85	322.79	5,432.45	8,276.61
• Boston	0.00	3.60	7.26	22.20	373.50	7,470.00	11,205.00
• Charlotte	1.32	5.32	9.32	25.32	401.32	8,001.32	12,001.32
• Chicago	0.00	0.00	2.84	8.51	141.84	2,836.80	4,255.20
• Cincinnati	8.65	8.65	12.45	27.65	358.20	6,695.20	10,168.20
• Dallas	2.22	5.21	8.20	20.17	219.50	4,340.98	6,510.18
• Denver	2.60	3.80	6.65	20.90	355.30	7,106.00	10,659.00
• Detroit	2.67	5.53	8.39	19.83	291.03	5,734.59	8,605.64
• Indianapolis	5.43	6.28	10.53	25.51	427.24	8,506.00	12,758.00
• Jacksonville	8.80	8.80	26.30	76.30	1,251.30	25,001.30	37,501.30
• Los Angeles	0.00	1.49	2.97	13.71	228.50	4,570.00	6,855.00
• Minneapolis	1.67	5.75	11.50	34.50	575.00	11,230.00	16,680.00
• New Orleans	5.60	9.51	13.66	29.54	425.05	8,107.08	12,296.62
• New York	0.00	1.98	3.96	11.88	198.00	3,960.00	5,940.00
• Philadelphia	11.80	14.56	17.31	28.33	338.83	5,773.33	9,051.67
• San Francisco	0.00	3.24	9.85	39.66	740.02	14,986.25	22,346.90
• Seattle	1.70	9.70	17.70	49.70	801.70	16,001.70	24,001.70
• St. Louis	4.17	5.47	6.77	11.97	134.17	2,604.17	3,904.17
• Washington, D.C.	0.00	8.11	16.21	48.63	810.50	16,210.00	24,315.00

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some areas, pumping and transmission costs can be major concerns. A waste treatment plant located far from its discharge stream can have high disposal costs. Another consideration is customer density — in areas where connections are dense, collection costs can be significantly lower than in areas where customers are more spread out.

Customer demand plays an important role in sizing facilities and therefore impacts rates. Facilities have to be designed to provide seasonal and hourly demand, as well as potential growth in the system. Peak demand usage may be significantly higher than average annual usage. As a result, customers may have to pay relatively higher rates during non-peak periods to have facilities available for peak periods.

A wastewater plant's effluent quality standards are established by the state and identified in the plant's National Pollution Discharge Elimination System Permit. These standards are influenced by the water quality of the discharge stream, as well as the pollutants treated. The level and type of wastewater treatment influences wastewater treatment design and related operating and capital costs. Communities with tertiary treatment typically would incur greater costs than communities served by secondary facilities.

General fund subsidization and grant funding also can impact the rate structure. General fund assistance might take the form of personnel services, purchasing, administration, accounting and data processing. And with grants, each area may have a different level of projects eligible for funding, and some states supplement federal funding with a state match. As a result, the local share can be significantly different from

Privatization Working in Auburn

Today, barely two years after Auburn, Ala., became one of the nation's first municipalities to enter into a privatization agreement for its wastewater treatment system, how is privatization working? Auburn Mayor Jan Dempsey has a ready answer. "It's working very well. All our expectations are being met."

The 25-year, $25-million agreement between the city of Auburn and Metcalf & Eddy, involves two new treatment plants (5.4 mgd and 1.6 mgd) and 25 miles of intercepting sewer. The larger of the two plants was put on line in December 1985, nearly 50 percent ahead of schedule, while the second plant went on line in July 1986. Both plants achieved compliance with federal discharge permits immediately upon startup.

The privatization decision by city officials in April 1984 was the culmination of more than 12 years of work to resolve, through traditional funding channels, the replacement of two 30-year-old plants unable to achieve consistent compliance and meet the demand of Auburn's growing population. Despite the city's efforts, Auburn remained low on Alabama's priority list for shrinking federal funds.

The city was left with two alternatives. "We could have financed the majority of the treatment system ourselves and waited for the rest in federal funds," City Manager Doug Watson explains, "or we could have gone with privatization. Privatization made better financial sense.

A wastewater sample is taken from the aeration basin.

"We saw the financial advantage to having a private company fund the project," says Watson, "simply because the private partner could take advantage of tax benefits and construction methods that were not available to municipalities. Additionally, we were able to reserve our debt capacity for other uses. Overall, our investigations projected a 30 percent savings to Auburn over the 25-year contract through privatization."

Cost savings were the most important factor in Auburn's decision to privatize, but an added benefit, according to Dempsey, was the rapid startup of the facilities. "We wanted those plants to be up and operating as quickly as possible for several reasons. First, we didn't want to endanger our streams and water sources; and second, we didn't want to discourage the active development that was underway in Auburn. Privatization promised to have the plants operating more quickly than through another financing method."

A critical concern of municipal officials was the quality of the treatment plants to be designed and built. "It is important to remember that we weren't trying to find a 'cheaper' plant," Watson says, "We were trying to find a way to build and operate the top-quality plants we needed at the most economical cost and in the least time."

Dempsey adds a final benefit. "The project has freed the time of city officials for other duties. That becomes very important. Now Auburn has professional engineers and operators with full, contractual responsibility for the operation and maintenance of those plants. Instead of city officials trying to understand what plants need and how they work, we can devote our time to other responsibilities that I don't feel are appropriate for contracting out. Dealing with the treatment plants was a time-consuming headache and one we are happy enough to be rid of."

When asked if there was any public opposition to the project, Watson says, "Sometimes someone gets upset because sewer rates have increased as a result of privatization, but when we explain that the choice was to have the rates double under this program or triple if we funded the project ourselves, people tend to back off."

The contract operations agreement terminated in July 1986 with the startup of the second new plant, resulting in an unexpected benefit to the city. In August, city officials accepted $35,271 from its contract operations partner to be used in part for developing a new park on the site of one of the abandoned treatment plants.

Despite the benefits realized by Auburn, Watson urges other municipalities to proceed with privatization plans carefully. "I definitely recommend privatization to other municipal officials. It has proven an excellent choice for us, from both a time and financial standpoint. But I caution municipal officials to move ahead with those plans carefully.

"From the beginning, trusted financial and legal advisors should be incorporated in the investigations to make sure the municipality's best interests are protected. Second, great care should be taken in selecting a private partner that has demonstrated its ability to deliver what it promises and to be around in the future," he says. "Finally, the municipal officials have to keep the public informed about the proposal, what it means, how it will work, and what it will cost. It's a new concept, and people will need to be informed of the alternatives and the benefits of each option." □

community to community, and rates will be impacted accordingly.

Typically, older systems require more maintenance, but an extraordinary amount of maintenance may be required with new treatment systems to work out the "bugs." Also with a new system, significant debt service costs may be required as compared with older systems where debt has been repaid or the debt is based on much lower historical dollars. The age of the system then should be evaluated to determine operating and capital revenue requirements, and the effect on rate comparisons.

The types of customers served by a wastewater system affect administrative, customer, treatment and transmission costs. In communities with numerous high-volume users, these costs can be relatively low. On the other hand, areas with high industrial discharge can incur significantly more operating and capital costs.

A major problem with many wastewater systems is the level of infiltration and inflow present. A high level means additional capacity requirements and related operating costs.

The methodology used by a community to establish rates influences the level of revenue requirements to be recovered and the distribution of costs to classes of water and wastewater customers. If the "cash needs" approach to rate setting is followed, cash requirements for utility operations are recovered through the rate base. If the "utility" approach is used, accrual revenue requirements are recovered through the rates.

The major difference is the handling of capital costs. Under the cash needs approach, debt service with related cash requirements and other capital cash outlays are recovered through the rates. Under the utility approach, depreciation and rate of return are recovered through the rates. In a climate of significant grant funding, capital recovery requirements could be significantly different under the two approaches.

Other rate-setting methodologies that would influence rates are the uniform rate approach where each unit of service is charged at the same price; the declining block structure, where higher usage levels gain a per-unit rate advantage; and the inverted block structure that charges higher rates for higher usage.

Survey analysts suggest care be taken in drawing conclusions on the rate structures of various communities. Comparisons among communities could signal to management, however, that there should be reasons why one community's rates are higher or lower than another's. Analysis into why there is a difference could be helpful in examining the effectiveness of a wastewater operation. ☐

Sewer Mini-Projects Succeed in Lexington

by Robert D. Wiseman

Until recently, Lexington-Fayette County, Ky., installed neighborhood sanitary sewers as government-planned, constructed and bond issue-financed projects. Each property was assessed a portion of the total design and construction costs, based on a formula utilizing front footage and property values.

Bond projects, however, are hampered by cumbersome legal processes, including required ordinances, public hearings and limited time frames. To provide an alternative to the long, complicated process, the county has assisted neighborhood leaders since 1980 in constructing sewers themselves as "mini-projects."

A mini-project is a cooperative neighborhood venture in which a group of property owners forms an association to privately contract the design and construction of collector sewer lines according to city and state guidelines. These neighborhood projects are usually less costly and completed faster. Also, mini-projects are less formal than bond projects, actively involving citizens in neighborhood decision-making. Basic construction, materials and inspection are the same under either method, the fundamental difference being project management and financing.

To the citizen, the real issue in sewer construction is cost. Under the bond method, Lexington-Fayette County has found main-line sewer construction costs as much as $4,000 per property, while mini-projects have built the same for $500 to $1,000 less per property. Homeowner participation can reduce costs by small percentages in different areas, adding up to substantial overall savings. For example, since a bond is not issued, a 1 percent reduction in legal and financial advisor fees is realized. Similarly, administrative and project management time and expenses are donated by citizens, saving money the county would have charged to the project. Incremental savings also can be found in engineering fees, easement costs and unrestrained bidding for private contracts.

Once a neighborhood in Lexington-Fayette County decides to initiate a mini-project, many steps are involved in bringing the project from consensus to construction. In the process, the neighborhood and the county share the responsibility of project management. A petition with 70 to 80 percent of the affected homeowners is presented and the county discusses the bond issue vs. mini-project methods at a neighborhood meeting.

The homeowners vote and if they choose a mini-project, a neighborhood association, with an executive committee, is elected to oversee the sewer design and construction. Once organized, the association bills each benefiting property owner for an engineering fee that covers design only. The executive committee submits the final design to the county for approval. If the design complies with the general master sewer plan for the area, as well as local construction standards, the association can begin accepting bids for sewer construction.

While mini-projects have certain advantages over traditional government bond projects, there have been negative aspects as well. Bond-issue programs give citizens an option of financing sewer construction over 20 years instead of putting the money up front. But in a mini-project, residents who may not be able to pay immediately are bound without choice to the privilege fee. Also, neighborhood consensus on design and construction is time-consuming. Finally, from the government perspective, overseeing and inspecting the neighborhood committee's progress and decision-making may be difficult.

In Lexington-Fayette County, however, almost 2,000 homes have installed sewers under the mini-project method. The county now offers neighborhoods the mini-project option formally before any legally binding action is taken on a bond project. ☐

Robert D. Wiseman is urban services coordinator for the Department of Public Works, Lexington-Fayette County, Ky.

Waste Disposal Issues Surveyed

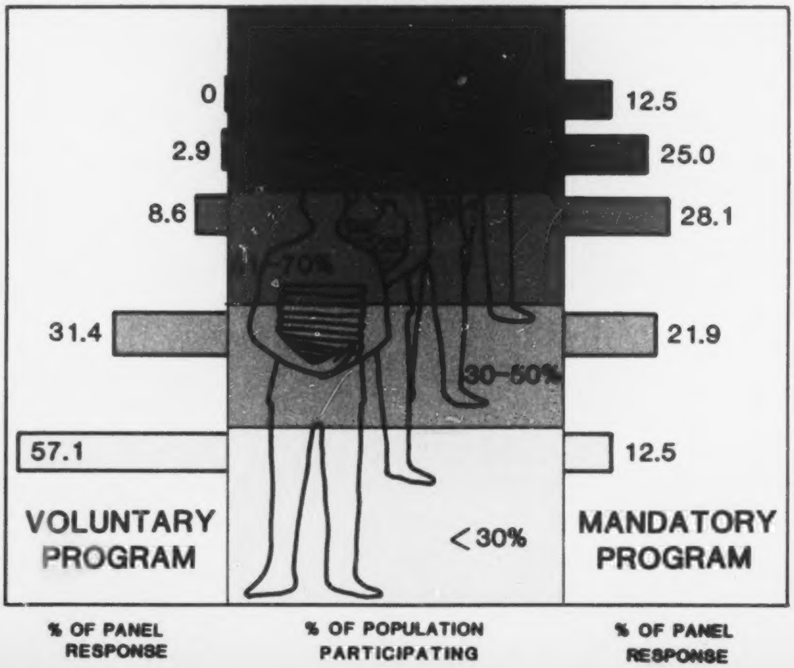
In an exclusive Delphi poll, solid waste authorities confront such major issues as dioxins, landfills, recycling, resource recovery and privatization.

By Stephen Schwarz and Merlin J. Shelstad

As America switches from a smokestack to a service economy, one form of U.S. output does not fall — consumer discards of solid waste, which continue to set new annual records.

The sheer physical size of this mountain of garbage — an Everest of unwanted and difficult-to-dispose-of material — is enormous. Municipal solid waste is both combustible and incombustible, biodegradable and possessed of a half-life extending to eternity. Its annual total is estimated to be 228 million tons or, at 25 pounds to the cubic foot, 18 billion cubic feet of waste — a mile-square pyramid rising to a height of more than 2,000 feet, or an area of 654 square miles, 10-feet deep in waste. These overwhelming numbers combine with a growing awareness of solid waste's environmental impact to cast a very long shadow over American life.

WHO WILL SUPPORT RECYCLING PROGRAMS?

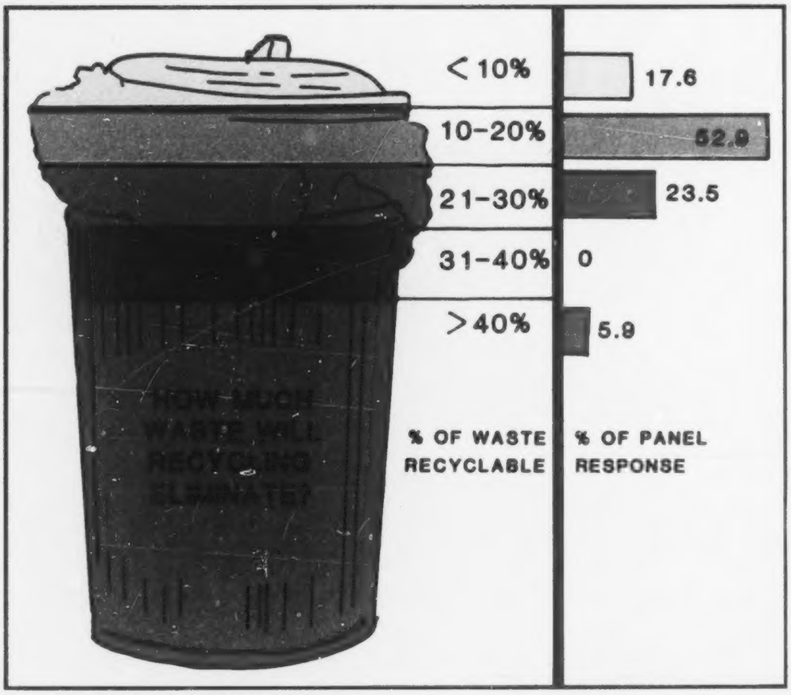


In an effort to divide where this shadow ends and the future begins, Malcolm Pirnie Inc., a consulting engineering firm that in an ongoing program, previously has polled industry leaders on other critical environmental topics, conducted a Delphi poll on the future issues of solid waste management.

This polling technique, named for the mythological Oracle of Delphi, was developed by the Rand Corp. as a structured method of soliciting expert opinion. Using the Delphi approach, the firm contacted 39 recognized authorities in the solid waste arena, from 18 states and the District of Columbia, representing all segments of the solid waste field — municipal, state and federal agencies, legislators, vendors, consultants, industry associations and academicians.

The Delphi process began with panel members responding to open-ended, essay-type questions. Based on their responses, a second round of questions was formulated, the answers to which then were used to develop a final questionnaire. The technique is designed to uncover the issues of greatest concern to the panelists, rather than predisposing them to comment on specific subjects.

Results of this three-step process in the current Delphi poll eventually focused on several key solid waste man-



agement issues: dioxin, recycling, the private sector's role, toxic waste in landfills, and resource recovery technology.

The most clearly defined area of agreement in the survey dealt with dioxin. Surprisingly, the respondents agree almost unanimously the public faces much less risk from dioxin emissions by waste-to-energy plants than from other, more common sources of carcinogens, such as cigarettes or charcoal-broiled meat. In fact, landfills, with a potential for groundwater contamination, are seen as a greater health hazard by about three-fourths of the respondents.

Based on the experience with resource recovery in Europe, where waste-to-energy plants have been in operation for more than two decades, almost two-thirds of the panel (63 percent) see no evidence that dioxins cause health problems.

Poll respondents, however, agree more information is needed. Fewer than one-third of the panelists say there are enough data on dioxins to fully assess the health risks of resource recovery, with nearly 49 percent agreeing more research on the health risks of dioxins is needed.

Even if a health threat exists, most see it as insignificant. Several say much of the furor over dioxin emissions stems from vocal opponents to resource recovery projects. "The very word dioxin," according to one participant, "creates an emotional response among the general public, and this can turn citizens into pawns for people and groups who are opposed to resource recovery facilities for a variety of reasons." Panic over dioxin is created by so-called science or public interest organizations that "use poorly founded scientific papers, misquoted data and deceptive methodology to give their claims some substance."

A slightly different emphasis was given by a Midwestern municipal official who comments, "The public is well informed of myths, but few facts. Facts can be and usually are dull reading for the general public."

A more conciliatory tone toward those opposed to resource recovery because of the dioxin issue was taken by a high-ranking state official, who notes, "While debate is raging among the world's scientists, it is unwise and incorrect to characterize dioxin as a non-issue." Among those opting to continue research in the field, one municipal official writes, "It is extremely important to expand efforts to test emissions from existing facilities and to get good, solid scientific evidence before the public."

Panelists, however, show little confidence in the public's ability to judge the dioxin issue rationally. "The average citizen judges environmental issues on an emotional level and is incapable of comprehending the technical arguments of the dioxin issue," according to 73 percent of the panelists.

Even if future research indicates dioxin emissions are not a health hazard and those facts are presented to the public, 77 percent of the respondents say many years would pass before the public changed its views. Panelists are almost equally divided, however, on the proposition that the public expects "zero" risk from environmental facilities regardless of cost.

Is the dioxin issue being used as an excuse for obstructing resource recovery plants? The panel also was nearly evenly divided on that question. One vendor says there is "no doubt that anti-incineration forces will be active for awhile, but unless they find an alternative to resource recovery other than landfill, they will evenually lose their clout."

An allied point of view was expressed by a government official from the Northeast, who warns, "Concern for dioxin emissions should not be confused with the dioxin scare raised by some opponents to further their true goals of stopping 'capital intensive, high-tech' facilities in favor of major recycling activities. No amount of technical research and data will sway these opponents because dioxin emissions are simply a tool to sway public opinion against major new facilities."

The news media are not a constructive force in the public discussion of dioxin, according to participants. Some 83 percent indicate news coverage on the issue is neither balanced nor factual.

Is America ready for recycling? Since the environmentally conscious 1970s, the concept has been tried with varying degrees of success in communities throughout the nation. To avoid the costs of waste processing, many communities are considering source separation programs in which households separate their wastes by type, such as plastics, glass, metals and newspapers, prior to collection. Delphi panelists were asked whether the typical U.S. citizen is ready for a real source separation program, and of those answering, 69 percent say "no."

The most frequently cited reason for their belief is: Americans have become a "throw-away" culture, prefer convenience and will not go out of their way to separate wastes.

Without public education, panelists did not foresee heavy participation. According to a majority of respondents, public participation would be less than 30 percent in a voluntary recycling program. The good news is 63 percent of the panelists believe a public education program on the benefits of source separation would substantially increase participation in recycling programs.

As to how to implement source separation, three-fifths agree citizens would participate in a source separation program if there were curbside pickup, but not if they have to take cans, bottles and newsprint to a recycling center.

Participation would improve if a recycling program were mandatory, according to most respondents, but the panel is evenly divided about whether the "carrot" or the "stick" approach would be more effective in getting most Americans to separate their trash. By better than a two-to-one margin, the panelists indicate cash incentives (a 5-cent return deposit on a bottle or can) would be more effective than monetary penalties (a $500 fine, for example).

Panelists did support the concept of "bottle bills," with 57 percent agreeing 5 cents is sufficient economic incentive to make bottle and can recycling successful. As one participant says, "Economics is the key to recycling. What Americans won't do for the environment, they will do for money."

The panel is split on whether large-scale recycling could be implemented in the United States only in national emergencies. The participants say socio-economic factors influence cooperation with source separation. Recycling, according to a preponderance of the panelists, appeals mainly to college-educated, middle- to upper-class citizens.

On the other hand, respondents do not write off the possibility of source separation in large urban centers, which are demographically diverse. More than half agree source separation will work in large cities, such as New York, Chicago, and Philadelphia. Finally, about half of the respondents say public works directors and consulting engineers underestimate the extent to which citizens would cooperate.

Not every participant in the poll says recycling makes sense. Several say there is no economic incentive because virgin materials are abundant and cheap. Others say market prices for recovered materials fluctuate too wildly. Significantly, however, only 29 percent say materials separation and recycling will not make economic sense within 15 years.

Landfilling, toxic waste

There has been much discussion recently forecasting the imminent demise of landfills. While a strong consensus is lacking among the panelists on whether landfilling will continue to play a primary role in "raw" unprocessed waste disposal, in a long-term view, about half say landfills will continue to be used.

Landfilling regulation was another subject considered by the panel. Some 86 percent agree regulations should be flexible to reflect site-specific conditions. However, when asked if landfill regulations should be less strict for small communities because they cannot afford the costs of compliance, the entire panel says "no" — a rare instance of consensus.

Existing laws are not enforced adequately by state agencies, according to 69 percent of the panelists. Moreover, the panelists are unanimous in acknowledging politics as a reality in landfill regulation, and 89 percent agree politics play a significant role in landfill permitting or closure decisions.

The issue of hazardous wastes, such as pesticides and cleaning fluids entering landfills in small quantities, along with wastes from households and small generators, concerns some panelists. Although they are divided evenly over whether small amounts of household hazardous wastes have significant environmental impacts at landfills, 94 percent agree that greater attention should be given to monitoring waste brought to municipal landfills to reduce the intake of toxic or hazardous material.

The growing role of the private sector in solid waste management, compared with the public sector, also was examined by the panelists. By a six-to-one margin, participants see this trend continuing.

Reasons most frequently cited are the private sector's ability to control labor costs and more competent management. In addition, 63 percent agree the private sector is better equipped to deal

Cobb County Reduces Litter With Cooperative Campaign

By Teresa DeFranks, Editorial Assistant

Working together, the Cobb County, Ga., Solid Waste and Corrections departments and the Cobb Clean Commission have reduced litter in the county by 69 percent in 18 months. This combination of resources and results earned Cobb the *American City & County* 1986 Award of Merit, solid waste division.

The partnership was organized by the Cobb Clean Commission, a volunteer litter watch-dog program affiliated with Keep America Beautiful.

"The Cobb Clean Commission is a new department in Cobb," explains Nancy Bickley, Cobb Clean Commission executive coordinator. "When we began two years ago, we didn't have a volunteer base (for the cleanup programs). We needed people; so, we went to the Corrections Department."

On weekends, participants in the Community Service Alternative to Incarceration (CSAI) program concentrate their litter removal efforts on the primary target areas predetermined by the Cobb Clean Commission. Under the direction of the Solid Waste Department, CSAI participants search collected loads of illegally dumped trash for clues that might indicate point of origin.

Bob McIntyre, Cobb Solid Waste Department director, says discarded mail, check stubs, or envelopes with names and addresses can be utilized to track trash to its source. "Once the owner is identified, he is notified by mail of the county's ordinance regarding improper disposal of solid waste," says McIntyre.

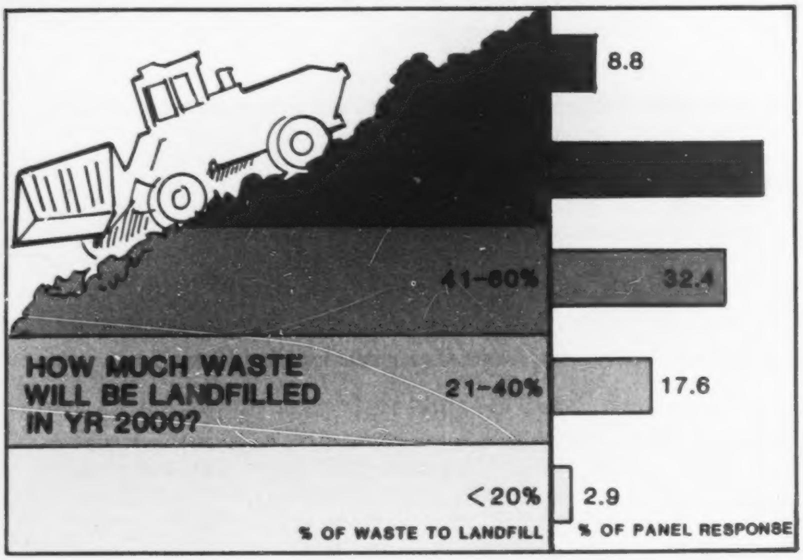
"The goal of this program is to keep Cobb clean, reduce litter and increase community awareness about who is responsible for the litter," McIntyre continues. "The partnership works because the Cobb Clean Commission brings the problem to the attention of homeowners and others in the county. They are out there cleaning, not just complaining."

McIntyre says the only costs incurred by the county for this program are the cost of uniforms and safety equipment for the CSAI participants, and trash bags.

Award of Merit

The county's litter reduction is assessed annually by the American Public Works Association's photometric index, which measures litter on roadsides and vacant property, around dumpsters, and behind commercial property — the major attractions for litter, Bickley says. "When the Cobb Clean Commission began, Cobb had a rating of 9.1 percent. The current rating is 2.8 percent."

The Cobb Clean Commission and the Solid Waste Department also have produced a program designed to educate elementary school children about proper waste management. Bickley says the program, "Where Does The Garbage Go?" will be shown in 34 elementary schools during the 1986-87 school year. "With this program, we try to get rid of the 'out of sight, out of mind' and litter is 'someone else's problem' attitudes," Bickley says. ☐



with certain aspects of waste management, such as refuse-to-energy, which have high risks and complex financial and technical considerations.

The much-touted cost efficiencies of the private sector did, however, come into question. About 60 percent of the sampling agree it has been overstated, and nearly half (49 percent) agree if a community is willing to take risks and manage well, it can handle solid waste problems internally and save money. And 74 percent agree competition from the private sector has made municipalities more competitive and businesslike.

Several panelists say the public sector has been hurt by cutbacks in financial support from federal and state sources. Further, some say public administrators want to be rid of the headaches of solid waste management. Finally, respondents agree the private sector has the advantage of being relatively removed from political influence.

Will the pendulum swing back?

Apparently not, say the respondents, since only 34 percent think once the public sector better understands the risks of waste-to-energy projects, there will be a significant shift to public sector management of resource-recovery projects.

As to whether increased reliance on the private sector has the potential for more graft and corruption, 57 percent say "no." In addition, only one-third agree the private sector is less concerned about environmental compliance than the public sector.

Some critics argue that because of the need for long-term maintenance and monitoring, landfills should be a public sector responsibility, but the Delphi panelists disagree with this premise by a two-to-one margin.

Despite their forecast of continued growth in private industry involvement, the respondents say there definitely is a continuing role for the public sector in solid waste management. Moreover, the overwhelming majority (89 percent) agree the private sector should not be left to do the job alone, but should be partners with government.

When asked what functions should be retained by the public sector, the panelists concentrated on six:

- environmental regulation, monitoring and enforcement;
- administration of licensing and contracting arrangements;
- public education;
- monitoring of performance;
- planning and siting functions; and
- overall solid waste management.

Resource recovery

Two of the many types of waste-to-energy technologies proposed so far have found general acceptance: mass-burn and refuse-derived fuel (RDF). The former process, which thus far has been more successful in the marketplace, incinerates waste as-received, while RDF employs some form of waste sorting and processing.

Mass-burn facilities are basically furnaces lined with water-filled tubes that capture the heat of combustion and use it to generate steam, electricity, or both. RDF originally was intended to be sold to electrical utilities or industrial boiler plants, but lost credibility when early projects suffered breakdowns and failures.

Asked to judge the prospects of the two technologies, the panelists overwhelmingly agree mass-burn would continue to dominate the resource recovery market, and in subsequent responses indicate solid waste agencies lack confidence in the RDF concept based on past experience. In a political climate, failure cannot be accepted, one panelist observes.

The panelists do say RDF technology will be improved in the future, especially simple RDF systems involving less processing. The possible air-quality control benefits of RDF, according to one panelist, may provide incentive for development of these facilities. Responses, however, are almost unanimous (94 percent) that dedicated boilers will be required to guarantee markets for the sale of RDF.

Other technologies are suggested as being promising, including residue conversion to construction materials, fluidized-bed combustion, composting, anaerobic digestion with sludge and low-BTU gasification.

What does the future hold?

In the area of solid waste collection, a large number of respondents predict more automation in an attempt to reduce labor costs. They also see continued refinements in collection equipment, such as the ability to collect source-separated wastes, use of smaller crews, or greater waste compaction.

Examining one of the major causes of solid waste problems — packaging materials — a large proportion of those sampled doubt any significant changes will occur to lessen the quantity of waste materials generated. Americans, they say, like the convenience and sanitary aspects of present packaging technology, and the use of packaging materials will continue to increase.

In contrast to other public works areas, such as water and wastewater management, the group says, by a ratio of about four-to-one, the level of training in solid waste management is currently inadequate. The panelists attribute this disparity to the fact the solid waste field is somewhat newer in terms of technical sophistication. Licensing agreements have restricted distribution of technical information, universities have not yet responded with suitable programs, and the field — unlike water and wastewater — has not received the support of federal policies.

The respondents do say, however, levels of training among all three areas eventually will be more equal.

On a tactical level, the panelists reveal an acceptance of the financial, political and public opinion realities that must be faced and are determined to adjust to them, while dealing with the industry's problems.

Strategically, even with their frequent division of opinion on many key issues, one point comes through loud and clear: both near and long term, industry leaders recognize the need for and will welcome continuing research and innovation. ☐

Stephen Schwarz is vice president and director of solid waste programs and Merlin J. Shelstad is senior editor for Malcolm Pirnie Inc., White Plains, N.Y.

MUNICIPAL COST INDEXES

The **Municipal Cost Index** for February rose half a point from last month, climbing to 341.4. The **Construction Cost Index, Consumer Price Index** and **Producer Price Index** also rose slightly in February. The **Producer Price Index,** however, still remains considerably lower than last year's figure.

In this month's marketbasket, products in the fuel and oil family continued to post losses. Price regulation changes in 1987, however, are predicted to drive oil and gas prices upward.

— Compiled by Joe Morris

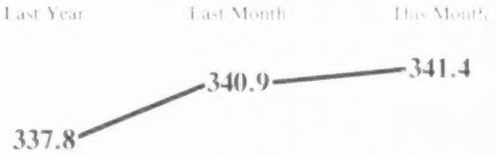
These figures are calculated on a base year of 1967.

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.0	-.2	1.1
Apparel	185.3	-.1	1.2
Asphalt Roofing	375.2	.7	-8.3
Books	142.6	.4	4.7
Chemicals, Industrial	316.0	-.5	-6.1
Coal	535.0	-.3	-.5
Concrete Products	323.8	-.2	.1
Construction Machinery	369.8	.7	1.8
Diesel Fuel	340.0	1.5	-50.8
Electric Components	203.4	0	2.9
Electric Lamps	346.6	-.3	.3
Electric Power	448.4	-.7	-1.0
Engines, I.C.	353.8	0	2.0
Fans, Blowers	366.5	0.2	1.9
Fertilizers, Mixed	245.6	-.6	-4.5
Floor Coverings	196.7	.4	3.3
Flow Instruments	237.8	.2	2.1
Footwear	263.5	0	2.0
Foundry Products	361.6	0	-.5
Fuel Oil No. 2	368.3	.3	-50.8
Furniture	320.8	0	2.3
Gasoline	311.6	.2	-45.2
Generator Sets	352.8	.1	.5
Glass	232.7	0	1.7
Glass Containers	401.6	.2	3.8
Gypsum Products	352.4	3.1	1.2
Hardware	304.9	-.6	-.8
Heating Equipment	271.4	-.2	3.7
HVAC Controls	131.4	1.2	3.3
LP Gas	296.9	-4.7	-47.8
Lubricants	350.6	-1.7	-4.4
Lumber	315.1	.4	4.8
Metal Fabrications	317.8	.5	1.0
Millwork	318.6	-.3	1.9
Motor Vehicle Parts	358.0	.1	.5
Mowers	263.7	0	.7
Natural Gas	1098.8	-1.4	-17.0
Office Machines	155.0	.2	.8
Paint	282.4	0	1.8
Paper	312.8	.7	4.0
Passenger Cars	249.4	-.2	6.3
Plumbing Fixtures	322.9	-.8	2.5
Plywood	235.2	-.5	2.4
Portland Cement	348.1	-1.2	-2.0
Residual Fuel	450.8	-.3	-49.1
Sand, Gravel	320.1	.4	3.1
Sanitary Papers	380.5	-.8	.1
Soaps, Detergents	274.3	.3	-.6
Sporting Goods	208.0	0	1.4
Steel Mill Products	350.4	-.2	-3.9
Struc. Clay Products	310.7	-.4	3.7
Switchgear	285.8	-.1	1.6
Tires, Tubes	230.9	-1.3	-2.1
Transformers	237.2	1.5	2.2
Trucks	347.8	-.1	3.8
Valves	107.3	-.1	1.8
Wire, Cable	204.8	-.3	-.4
Wiring Devices	379.8	.4	4.5

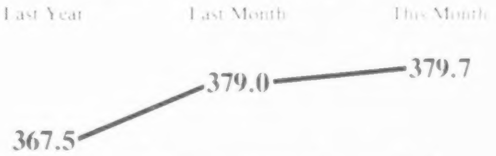
At-A-Glance Changes

MUNICIPAL COST INDEX



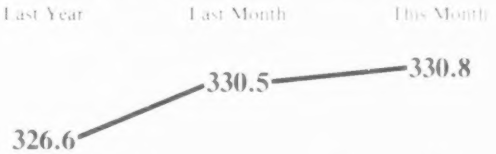
Percent Change From Last: Month **.1** Year **1.1**

CONSTRUCTION COST INDEX



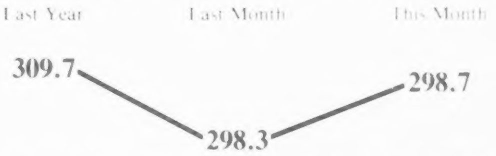
Percent Change From Last: Month **.2** Year **3.3**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.09** Year **.31**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **0.1** Year **-3.6**

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	611.6B	.5	6.9
Federal Grants	106.1B	-.7	5.9
Durable Purchases	22.8B	1.8	9.1
Consumables	36.6B	-.3	-5.4
Services	378.9B	1.9	7.8
Structures	66.4B	6.9	15.9
Salaries, Wages	302.9B	1.7	7.1
Surplus	59.0B	-15.7	-.3
Employment	13.711M	-.2	.5

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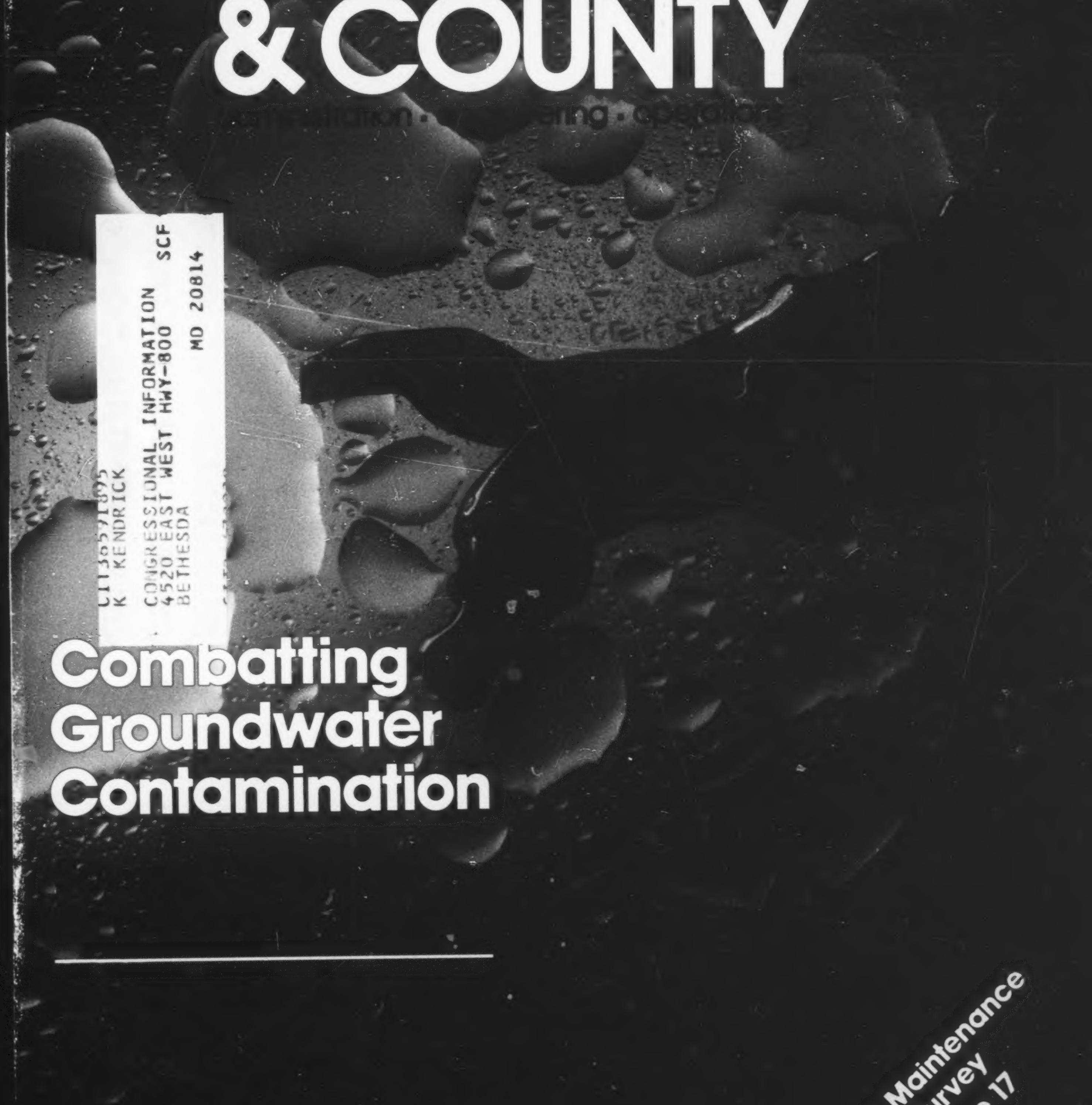

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Combatting Groundwater Contamination

Fleet Maintenance Survey Page 17

AMERICAN CITY & COUNTY®

BPA

March 1987 Vol. 102, No. 3

SPECIAL REPORT

28 Public/Private Partnerships Will Survive Tax Reform
Despite rumors to the contrary, the future for public/private partnerships in environmental services remains bright despite the Tax Reform Act of 1986.

COVER STORY

30 Attacking Tainted Groundwater Supplies
Cover Photograph by Double Vision, Atlanta
As the issue of groundwater contamination gains recognition and importance, cooperation between the affected parties may bring about timely, cost-effective solutions. ☐ **32** Colorado School District Thwarts Contamination ☐ **34** Reservoir Cover Cuts El Toro Water Costs ☐ **37** Fabric Reduces Erosion Problem ☐ **38** Pipe Installment Causes Few Problems

BUILDINGS & GROUNDS

42 'Intelligent' Features Upgrade Facilities
Retrofitting municipal buildings with high-tech features has enhanced energy conservation, office efficiency and security. ☐ **44** Drive-up Window Streamlines Services ☐ **46** Santa Clara Partnership Builds Convention Center ☐ **47** St. Paul Computerizes Facilities Maintenance ☐ **49** Product Review: Office Equipment

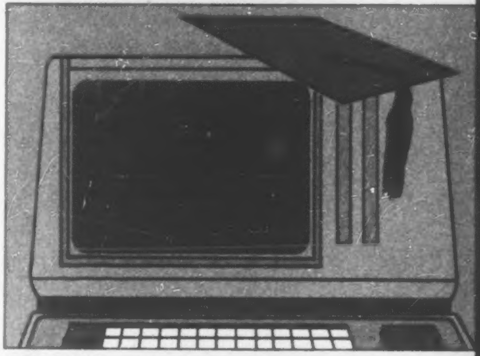
ECONOMIC GROWTH

50 Sowing the Seeds of Economic Growth
As more cities are forced to cut back on expenditures and vital services, more attention is being focused on businesslike, efficient city management to reduce costs. ☐ **52** Healdsburg Gives Assist ☐ **55** Pittsburgh Partnership Saves Pirates ☐ **56** Lackawanna Repackages Steel Plant for New Jobs

COLUMNS

12 Inside Washington . . . The Reagan administration and the Democratic-controlled Congress battle over the budget.
14 Financial Management . . . Cash and advance refundings can effect savings, but care must be exercised.
20 Office Automation . . . More users with large-volume document management applications are benefiting from computer-assisted retrieval systems.

50 Economic Growth



42 Intelligent Features

1988 BUDGET

12 Budget Battle

DEPARTMENTS

24 **Across America**
9 **Calendar**
67 **Classified**
4 **Editor's View**
70 **Municipal Cost Indexes**
60 **New Products**
16 **Newsmakers**
64 **Professional Services**
10 **Reader's Forum**
63 **Services & Contracts**
62 **Video & Print**

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ACROSS AMERICA

Congress Overrides Clean Water Veto

Members of the 100th Congress barely took time to warm their chairs at the opening of the new session in January before introducing legislation authorizing billions of dollars for sewage treatment and highway and mass transit programs.

The first measure introduced in both the House and the Senate — a clean water bill identical to one President Reagan pocket-vetoed at the end of the last session — is now law, and local governments can forge ahead with plans to fund water treatment programs. The clean water bill moved quickly through Congress, passing by overwhelming votes in both houses, and was on the president's desk for a signature by the end of January.

In his first confrontation with the new Democratic-controlled Congress, the president vetoed the bill in early February, calling it a "budget-buster ... loaded with waste and larded with pork." The House and the Senate, however, voted to defy the president, overriding the veto by healthy margins.

"The president's veto (was) an unfortunate mistake," said Sen. John Chafee of Rhode Island, who previously chaired the Senate Environment and Public Works Environmental Subcommittee, in a written statement. "This is a good bill and the president missed an opportunity to join us in taking an important step toward a cleaner environment."

The new law is an extension of the 1972 Clean Water Act, which was enacted to force municipalities and industries to control pollution by cleaning wastewater before discharging it into waterways. The law authorizes $18 billion in federal aid to state and local governments over the next eight years for construction of sewage treatment facilities and $2 billion for related water pollution cleanup. While $9.6 billion of those funds will go toward direct federal grants to states, $8.4 billion would be used to establish state-operated revolving loan funds that would eventually phase out federal aid.

"This is a very important piece of legislation," says Randy Arndt of the National League of Cities. City and county administrators "can begin to make longer-term commitments and put into place some plans to continue the cleanup of wastewater conditions in their area," he notes. The provision to set up the long-term funding mechanism is a particular benefit for cities, he says, as are the regulations for stormwater runoff in the new law.

The stormwater runoff provision says municipalities with less than 100,000 residents do not need permits for stormwater sewers, unless a known pollution problem exists. Permits are required, however, for discharges from industrial activity and sewer systems in cities with more than 100,000 people.

Unlike the water bill, the federal highway aid program, though moving along, will proceed in the slower lane because approved House and Senate versions are so disparate. In January, the House passed a 5-year, $91.6-billion highway and mass transit program, authorizing funds to complete the interstate highway system, and construct and repair other major roads.

The Senate spent several days debating the bill in early February and finally approved a $65.4-billion aid package, setting the stage for a debate with the House on costs and features of a final bill. The Senate measure would raise the national speed limit to 65 mph on rural interstate highways, while the House version would authorize funds for about 90 demonstration projects.

These disparities, along with funding level differences, could take weeks for a conference committee to iron out, say staffers on the Hill, though they express hope Congress can act quickly to save highway programs. Meanwhile, President Reagan has indicated he will veto any bill he considers "excessive," an administration official warns.

Now, with each month that passes, more projects are being stalled, according to state highway officials. Many states, particularly in the North, are concerned the current highway construction season could be lost if the release of federal highway revenue to the states is not reauthorized by March.

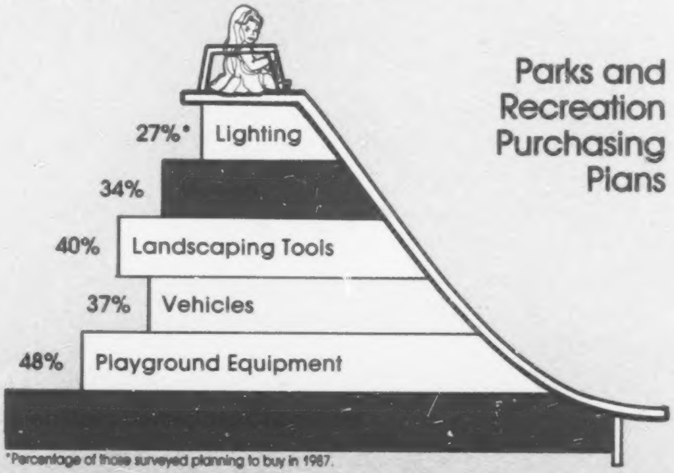
The American Association of State Highway and Transportation Officials (AASHTO), in a survey sent to 50 state highway and transportation departments, has determined 424 projects valued at nearly $684 million already have been postponed. If legislation is not enacted by the first of March, 767 projects valued at $1.2 billion will be delayed.

If a conference committee can hammer out a bill by early March, AASHTO representative Bill Higgins says "it would be a pretty good shot in the arm."

— Ellen Perlman

Survey Spotlight

In an exclusive *American City & County* survey, park and recreation directors said they planned to purchase the following in 1987:



*Percentage of those surveyed planning to buy in 1987.

'Banner Year' Seen For Tort Reform

Lester Poggemeyer, president of the American Consulting Engineers Council (ACEC), predicts tort reform will rank high on legislative agendas in 1987. "Although more than 20 state legislatures enacted some kind of tort reform in 1986, we're still declaring 1987 as the banner year for tort reform," he says.

Consulting engineers, who are greatly

MUNICIPAL COST INDEXES

For the first time in more than a year, the **Municipal Cost Index** for March did not change from February's figure of 341.4. The index's stability is due to slight increases in the **Construction Cost Index** and **Consumer Price Index**, and a minute decrease in the **Producer Price Index**. The producer price drop is the first this year, leaving that index well below figures from one year ago.

In this month's marketbasket, several commodities showed slight decreases, including lubricants, lumber, plywood and tires. Gaining were diesel fuel, fuel oil No. 2, gasoline and portland cement.

—Compiled by Joe Morris

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Percent Change From: Last Year
Air Conditioners	148.9	.1	.8
Apparel	184.1	.6	.4
Asphalt Roofing	371.7	.9	8.7
Books	142.7	.1	4.5
Chemicals, Industrial	316.9	.3	-6.0
Coal	535.0	0	1.1
Concrete Products	324.6	.2	.2
Construction Machinery	370.7	.2	2.0
Diesel Fuel	357.4	5.1	-49.7
Electric Components	203.1	-.1	2.4
Electric Lamps	346.9	.1	0
Electric Power	447.0	.3	1.0
Engines, I.C.	353.8	0	1.9
Fans, Blowers	366.5	0	1.5
Fertilizers, Mixed	245.5	0	-3.6
Floor Coverings	196.7	0	3.1
Flow Instruments	238.2	.2	2.5
Footwear	263.8	.1	2.0
Foundry Products	363.3	.5	.1
Fuel Oil No. 2	385.6	4.7	48.9
Furniture	320.9	0	2.3
Gasoline	316.2	1.5	-44.6
Generator Sets	352.6	-.1	.4
Glass	233.0	1.5	.1
Glass Containers	402.0	.1	3.9
Gypsum Products	347.4	-1.4	-2.5
Hardware	305.3	.1	-.8
Heating Equipment	271.7	.1	3.7
HVAC Controls	131.7	.2	3.9
LP Gas	294.2	-.9	-52.4
Lubricants	346.3	-1.2	-5.9
Lumber	349.5	-1.0	6.5
Metal Fabrications	316.8	-.3	.6
Millwork	318.1	.2	1.8
Motor Vehicle Parts	358.9	.3	.9
Mowers	264.2	.2	.9
Natural Gas	1023.7	-6.8	-21.6
Office Machines	155.2	.1	1.0
Paint	281.9	-.2	1.3
Paper	313.4	.2	4.1
Passenger Cars	247.7	-.7	6.6
Plumbing Fixtures	322.2	-.2	2.4
Plywood	233.7	.6	1.3
Portland Cement	341.5	-1.9	-4.3
Residual Fuel	479.7	6.4	-49.8
Sand, Gravel	319.1	-.3	2.9
Sanitary Papers	382.3	.5	.8
Soaps, Detergents	267.6	-2.4	-3.2
Sporting Goods	207.9	0	2.1
Steel Mill Products	349.7	-.2	-4.1
Struc. Clay Products	308.8	-.6	2.3
Switchgear	285.8	0	1.4
Tires, Tubes	230.9	0	-1.9
Transformers	234.8	-1.0	.8
Trucks	348.2	.1	3.8
Valves	107.4	.1	1.5
Wire, Cable	204.7	0	-.5
Wiring Devices	380.0	.2	4.5

At-A-Glance Changes

MUNICIPAL COST INDEX

Last Year	Last Month	This Month
337.8	341.4	341.4

Percent Change From Last: Month **0** Year **1.0**

CONSTRUCTION COST INDEX

Last Year	Last Month	This Month
367.5	379.7	380.0

Percent Change From Last: Month **.08** Year **3.4**

CONSUMER PRICE INDEX (BLS)

Last Year	Last Month	This Month
326.6	330.8	331.1

Percent Change From Last: Month **.09** Year **1.4**

PRODUCER PRICE INDEX (BLS)

Last Year	Last Month	This Month
309.7	298.7	298.1

Percent Change From Last: Month **−.2** Year **−3.7**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Percent Change From: Last Year
Receipts	629.1B	2.9	7.7
Federal Grants	108.0B	1.0	7.8
Durable Purchases	22.9B	2.2	9.5
Consumables	36.6B	-0.3	5.4
Services	378.8B	1.8	7.6
Structures	66.4B	6.9	15.9
Salaries, Wages	302.9B	1.7	7.1
Surplus	64.0B	8.7	7.6
Employment	13.981M	0.12	2.1

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AMERICAN CITY & COUNTY

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Managing Budgets For Snow Control

Fighting To Save Park Programs

Geobased Systems Map Infrastructure

Con Expo '87 Product Review

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April 1987 Vol. 102, No. 4

COVER STORY

28 Managing Budgets for Snow Control
Cover illustration and design by Deb Gaston
Improved efficiency and cost-effectiveness can be achieved with insightful equipment maintenance and management techniques. ☐ **30** State DOTs Test Salt Substitute ☐ **32** Using Value Management for Snow-removal Operations ☐ **34** Parked Cars Plague Snowfighters ☐ **36** Plastic Fences Make N.Y. Highways Safer.

PARKS & RECREATION

38 Fighting Back
Traditional funding sources for public park and recreation programs have been sliced by a variety of swords, but officials are finding ways to survive. ☐ **40** Houston's Briarbend Park Undergoes Transformation ☐ **44** Playground "Raised" in Hamilton, N.Y.

OFFICE AUTOMATION

50 Computer-Mapping the Infrastructure
Geobased mapping systems are coming into widespread use, and as this technology catches on nationwide, most municipal departments will be able to restructure their functions. ☐ **52** Mapping System Boon for Small City ☐ **56** York County System Allows Remote Access ☐ **57** Information System Aids Planners ☐ **58** New York Automates Corrections Department.

PRODUCT REVIEW

66 ConExpo '87 Product Review
More than 110,000 people attended the recent ConExpo in Las Vegas, Nev. Approximately 300 exhibitors displayed their construction-related equipment. A broad sampling of companies and products appears, with more information available by using the reader reply cards in this issue.

COLUMNS

8 Inside Washington . . . R. Dean Tice of the National Recreation and Park Association discusses the challenges faced by local park and recreation officials.

12 Financial Management . . . A survey of municipal officials probes the effects of the public-official liability crisis.

14 Office Automation . . . Computer-assisted retrieval systems can ease document management.

38 Parks Survive

50 Geobased Mapping

8 NRPA's Tice Speaks Out

DEPARTMENTS

19 Across America
6 Calendar
76 Classified
4 Editor's View
80 Municipal Cost Indexes
16 Newsmakers
73 Professional Services
62 Resource Recovery
71 Services & Contracts
59 Video & Print

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Survey Probes Liability Issues

By John R. Miller

"This municipality has been sued, or is being sued, on six to eight occasions without good cause. It has never been sued where the claimant had a powerful case, and yet, insurance companies continue to pay out-of-court settlements rather than go to trial."

"Government agencies should be liable for wrong situations. However, this thing has gotten out of hand. People will now sue you even if they are negligent — and they win their suits. Our rates are tremendous."

"Unless negligence 'beyond the shadow of a doubt' can be proved, no litigation should be allowed. Filing suit seems to be the 'in thing' and justice is not really the issue."

Over the past several years, tales of woe concerning public-official liability insurance problems have been prevalent. Many have said a crisis is upon us. Others have said whatever crisis existed is wending its way toward extinction. Likewise, some have said all along the public-official liability crisis is as real as the unicorn.

But the quotes above, drawn from a recently concluded survey by Peat Marwick and the Public Risk and Insurance Management Association, validate a tangible concern. Designed to be the most comprehensive study undertaken on the subject, the survey set out to measure not only perceptions of the crisis, but also the extent of its effects. Who or what was believed to be the culprit? What recommendations were being put forth to counter it?

The survey of public officials was part of a larger study conducted last fall of corporate and non-profit executives, who allegedly were experiencing difficulties obtaining liability insurance for their directors and officers. The 244 public officials participating in the survey were, for the most part, city managers, city administrators, mayors or directors of finance, serving governments with operating budgets of $5 million or more.

The majority, 56 percent, said the public-official liability problem may evolve into a crisis, while 40 percent said the situation already had reached crisis proportions. Only 4 percent of the respondents said no crisis exists.

Some suggest the liability problem is damaging the quality of governance. Thirty-five percent of the respondents said the problem is having "some negative effect" and 39 percent said the situation is having "some negative effect and definitely getting worse." Another 12 percent affirmed "considerable damage has already been done." Interestingly, 6 percent each were polarized, indicating there was "no negative effect of consequence" and "a great deal of damage already has been done."

Placing blame for the problem is difficult. Thirteen possible culprits were offered in the survey and respondents gave multiple answers. The increasing propensity of the public to sue, lawyers, juries granting high awards and heavy publicity for big settlements were leading causes of the problem, according to the respondents.

When asked whether their government organization currently carried public-official liability insurance, the vast majority (83 percent) said yes. Respondents also were asked how important an effect the liability problem was having on the way they were managing their organization. Fifty-five percent said the liability problem has had "some effect," while 32 percent said there has been either "considerable" or "a great deal" of effect. Only 10 percent reported having no difficulties.

The survey revealed public official liability insurance premiums are rising, sometimes in staggering proportions. When policies were last renewed, 26 percent reported their premiums increased up to 49 percent. Premiums rose 100 to 299 percent for 22 percent of the survey respondents, and another 15 percent said their premiums skyrocketed beyond 300 percent. Deductibles and the maximum amount of coverage also were affected.

The overwhelming majority — 87 percent — approved of legislation being adopted in their states addressing the problems of trustees and directors of not-for-profit organizations. Three percent said such legislation already exists in their states, while 4 percent opposed enacting such a law.

The survey asked for reactions to different legislative proposals offered to resolve the current debate on the public-official liability problem. Three-quarters strongly favored eliminating joint-and-several liability, with another 12 percent "somewhat in favor." Six percent were either "somewhat" or "strongly" against such a measure.

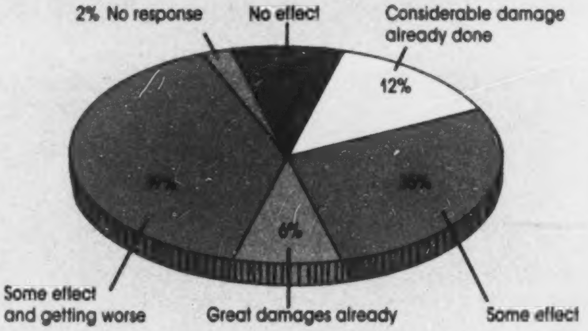
Putting a cap on attorney's contingency fees was strongly favored by 77 percent of the respondents, with another 15 percent "somewhat in favor." Only 2 percent were "somewhat" against and no one adamantly opposed such legislation.

The final legislative proposal surveyed had less overwhelming support. The majority (58 percent) strongly favored allowing a defendant to sue a plaintiff for the cost of defense where the defendant prevails, with another 28 percent favoring the measure "somewhat."

The survey revealed a very real problem. A full-fledged public-official liability crisis would pose a grave threat to everyone — not just members of a government body. The more dollars government organizations have to pay out in a liability judgment, the higher the insurance premiums and deductibles will be. The money has to come from somewhere, which may mean fewer resources for public services or a bigger tax bite to maintain normal levels of operation. ☐

Is the liability problem damaging the quality of governance?

Some people have said the director and officer liability problem is damaging the quality of governance. Peat, Marwick, Mitchell & Co. surveyed 244 municipalities on the negative effects.



John R. Miller is national director, government services, for Peat Marwick Mitchell & Co., New York.

ACROSS AMERICA

Pittsburgh To Host Snowfighters Meeting

More than 500 snowfighters from the United States and Canada are expected to attend the North American Snow Conference in Pittsburgh, April 7-10. The conference, sponsored by the American Public Works Association (APWA) and the Western Pennsylvania Chapter of APWA, will include technical sessions and tabletop exhibits.

Topics on the program include: equipment tips; new chemicals for snow and ice control; snowfighting agreements and contracts; airport snow removal; a survey of snowfighting practices; pre-wetting stockpiles; how to protect employees; minimizing liability; snowdrift control; and snowfighting materials such as salt.

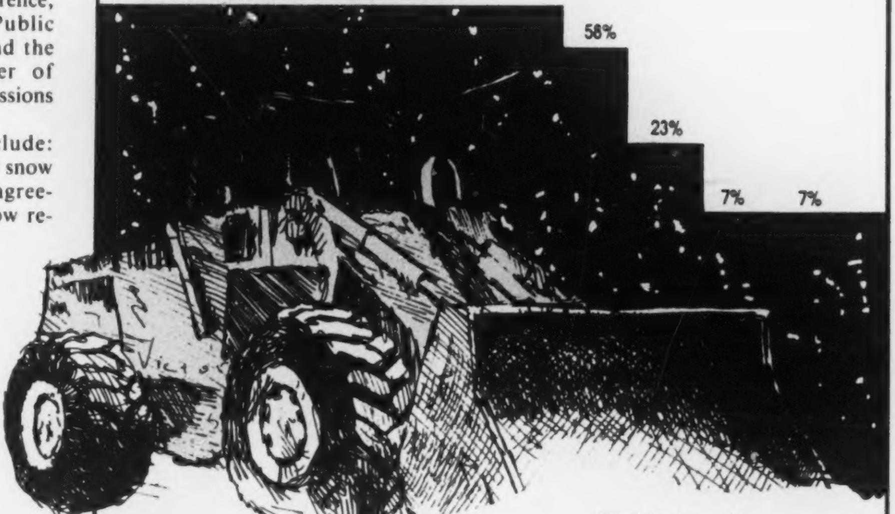
General sessions are scheduled to include "How to Plan Effectively for Winter" by Carl Tosi of Allegheny County, Pa., "Baltimore's Swift Program" by Tom Rieley of the city's Department of Motor Vehicles, "Your Bridges Need Special Winter Care" by W.G. Johnson of the Pennsylvania Department of Transportation, and "How the Wind Chill Factor Affects Roads" by Harry Bisco of Allentown, Pa. Two speakers from the University College of Great Britain will discuss thermal mapping, ice detection and radar.

Paul Ostrowski, maintenance engineer for Allegheny County, Pa., will serve as general chair for the conference. More information is available from APWA, 1313 East 60th St., Chicago, Ill. 60637, (312) 667-2200.

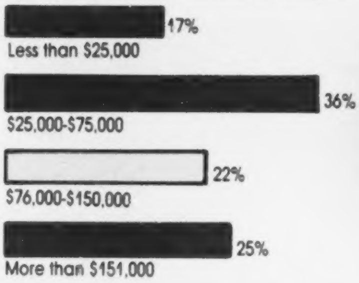
Survey Spotlight

In January, *American City & County* surveyed readers on snow removal issues. Since 70 percent of the respondents were based in communities with less than 50,000 people, the following answers are based on this segment.

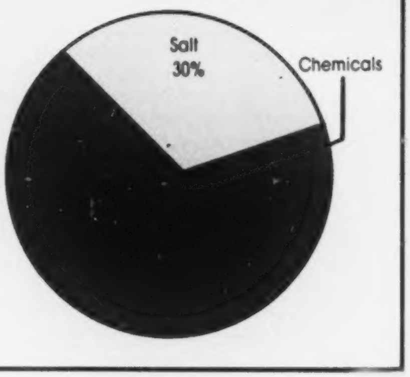
How many trucks are in your snow fleet?



What is your annual snow removal budget?



What do you use?



Municipal Bond Volume Expected To Decrease

Municipal bond volume will decrease this year and the decline will not result solely from new federal legislation reducing the effective yield on interest-free munis, according to John Sebastian, executive vice president of Clayton Brown & Associates, a municipal bond specialist based in Chicago. He says lower interest rates also will contribute to the decreased volume.

Sebastian forecasts the new issue volume will not exceed $110 billion in 1987 unless interest rates drop another 50 to 75 basis points, a possibility he says is unlikely.

"For tax-free bond buyers, this means there should be no special surprises in 1987," he says. "This will be the first time in eight years there will be no special rush to issue bonds in advance of some new restrictions on some facet of municipal bonds or a change in the tax status of municipal bond buyers." As a result, Sebastian predicts tax-exempt indicies will mirror their taxable counterparts more closely.

Sebastian says municipal bond yields will shift upward to a higher percentage of the actual yield on Treasuries. "Ten-year municipals should provide 80 percent of the Treasury yield, while longer term tax-frees at 85 percent or more will not be unusual," he says. "Since longer-term, high-grade municipals now provide over 90 percent of the yield of comparable maturity Treasuries, they are especially attractive."

Bank-qualified munis also are an attractive investment opportunity, he says, because the spread — or difference in the yield between qualified and non-qualified bonds of the same rating and maturity — has narrowed from as much as 100 basis points last fall to only 10 points or less. According to Sebastian, "We'll see that spread begin to increase as soon as banks attempt to shelter their income — by buying qualified municipal bonds."

Presidential Panel Urges Local Action

Dramatic increases in federal funding for outdoor recreation and strong local action were among the recommendations made by the 15-member President's Commission on Americans Outdoors in a summary

MUNICIPAL COST INDEXES

The **Municipal Cost Index** for April rose slightly more than one point, to 342.7. This marks the first rise in the index since February's figure of 341.4. The **Producer Price Index** and **Construction Cost Index** also rose this month, while the **Consumer Price Index** dropped for the first time in several months.

In this month's marketbasket, products in the fuel and oil family continued to rise, as did portland cement, sanitary papers and office machines. Several products showed slight declines, with lubricants dropping the most.

—Compiled by Joe Morris

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.5	.4	1.0
Apparel	184.5	.2	.9
Asphalt Roofing	371.0	−.2	−8.5
Books	143.0	.2	4.6
Chemicals, Industrial	323.9	2.2	−5.2
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Foundry Products	363.9	.2	0
Fuel Oil No. 2	438.4	13.7	−36.2
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Gasoline	347.4	9.9	−34.8
Generator Sets	352.0	−.2	.6
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Glass Containers	401.1	−.2	3.1
Gypsum Products	344.4	−.9	−4.4
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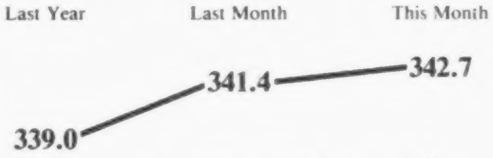
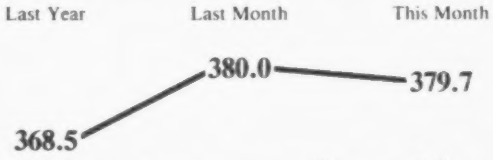
At-A-Glance Changes

MUNICIPAL COST INDEX



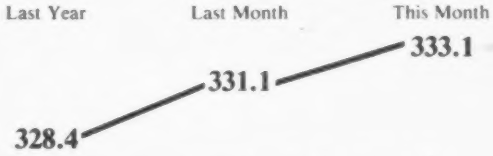
Percent Change From Last: Month **.4** Year **1.1**

CONSTRUCTION COST INDEX



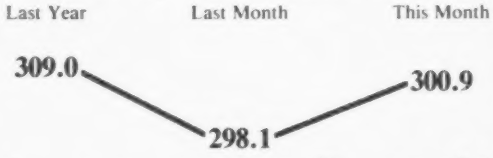
Percent Change From Last: Month **.08** Year **3.0**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.6** Year **1.4**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.09** Year **−2.6**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
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WasteExpo Report

- Hazardous Wastes
- Collection Technology
- Resource Recovery

Infrastructure Progress Predicted

Special Section:
Public Finance '87

AMERICAN CITY & COUNTY®

BPA

May 1987 Vol. 102, No. 5

SPECIAL REPORT

38 Analysis Limits Reactive Management
Infrastructure management programs can help local governments execute fiduciary responsibilities properly.

COVER STORY

40 Managing Wastes
Cover photo courtesy of Malcolm Pirnie
Waste collection, disposal, hazardous wastes, landfills and resource recovery are interrelated concerns of the waste mangement industry. □ **42** Automated Collection Reduces Labor Costs □ **44** North Hempstead Adopts Mandatory Recycling □ **46** Trenches Stop Seepage □ **48** Hazardous Material Spills and the Local Response □ **50** Newark Prepares Hazardous Substance Safety Programs □ **54** Options Are Available for Resource Recovery □ **56** Olmsted County Builds Residential Plant □ **58** Product Review: Waste Equipment

PUBLIC FINANCE

PF 1 Public Finance '87
In this special supplement, several key financial issues affecting city and county officials in all operations are discussed. □ **PF6** How To Get Along Well with the Rating Agencies □ **PF8** Tips for the Meeting □ **PF10** Outside Review Analyzes Treasury Management □ **PF12** Competing Over Real Estate □ **PF16** Excess Insurance Alternative Provides Risk Management □ **PF18** Pittsburgh's Bond Rating Rebounds □ **PF20** Using Wrap-up Insurance To Reduce Construction Costs □ **PF22** Pension Planners Consider Real Estate Investments □ **PF24** Advance Refunding of Debt

EDITORIAL BOARD

87 Infrastructure Tops Agenda
Members of the *American City & County* Editorial Advisory Board say priorities are shifting for financing and implementing projects. □ **89** A Bottom-line Decision □ **92** Exploring Landfill Gas

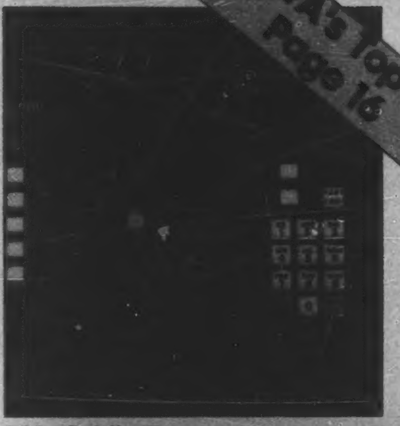
CONVENTIONS & TOURISM

96 Unlocking Tourism's Potential
With $30 billion a year in potential revenue at stake, more communities are developing plans to capture the travel dollar. □ **98** Unique First Impression Key to Increasing Tourism □ **100** Bill Brings Connecticut Regional Tourism Districts □ **102** Astute Planning Keys San Antonio Effort □ **105** Savannah Offers Visitors Array of Firsts □ **106** Babbitt Promotes Tourism in the Wilderness

COLUMNS

20 Office Automation
22 Financial Management
26 Inside Washington

APWA's Top Ten Page 16



PF 1 Public Finance '87

40 Waste Management

WELCOME TO OURCITY

96 Tourism's Potential

DEPARTMENTS

28 Across America
8 Calendar
117 Classified
4 Editor's View
120 Municipal Cost Indexes
108 New Products
16 Newsmakers
114 Professional Services
12 Readers' Forum
107 Resource Recovery
113 Services & Contracts
112 Video & Print

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MUNICIPAL COST INDEXES

The **Municipal Cost Index** for May continued its slow rise, reaching 343.9. The **Construction Cost Index** also continued to rise slowly, as did the **Consumer Price Index**. The **Producer Price Index** rose more than half a point to 302.7, a significant gain after a year-long slump.

Products in this month's marketbasket showed few changes. Rising slightly were diesel fuel, internal combustion engines, mixed fertilizers, foundry products and plywood, among others. Products losing ground included industrial chemicals, paper, tires, trucks and coal.

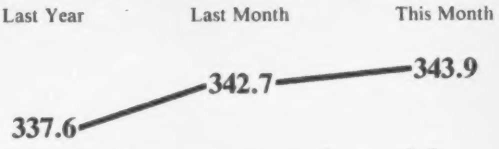
— Compiled by Joe Morris

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Percent Change From: Last Year
Air Conditioners	149.6	.1	.9
Apparel	183.8	–.4	.2
Asphalt Roofing	369.8	–.3	–8.8
Books	143.3	.2	4.2
Chemicals, Industrial	323.4	–.2	–3.5
Coal	535.5	–.3	–.8
Concrete Products	325.1	0	0
Construction Machinery	371.4	.2	1.6
Diesel Fuel	421.1	5.0	–17.1
Electric Components	203.3	.2	1.7
Electric Lamps	347.8	.4	–.8
Electric Power	443.5	–.1	–3.6
Engines, I.C.	360.6	1.9	3.3
Fans, Blowers	369.9	.4	.7
Fertilizers, Mixed	251.5	3.5	–.9
Floor Coverings	197.7	.1	1.4
Flow Instruments	238.7	.1	1.8
Footwear	263.8	–.3	1.3
Foundry Products	363.0	–.2	–.6
Fuel Oil No. 2	446.5	1.8	–12.0
Furniture	323.0	.1	2.6
Gasoline	368.8	6.2	–22.0
Generator Sets	352.8	.2	.7
Glass	234.4	.1	2.0
Glass Containers	404.7	.9	3.9
Gypsum Products	341.4	–.9	–5.7
Hardware	305.4	.6	–1.7
Heating Equipment	271.5	0	2.5
HVAC Controls	131.7	.2	3.8
LP Gas	340.3	10.1	–41.0
Lubricants	352.1	3.6	–7.5
Lumber	323.8	1.2	6.4
Metal Fabrications	316.7	.3	.4
Millwork	321.6	.3	3.1
Motor Vehicle Parts	359.9	0	.8
Mowers	263.6	0	.2
Natural Gas	1086.0	1.8	–14.8
Office Machines	156.9	.1	2.0
Paint	281.4	0	1.0
Paper	318.1	.9	5.5
Passenger Cars	238.1	–3.6	3.5
Plumbing Fixtures	331.8	2.4	4.9
Plywood	237.2	1.7	3.7
Portland Cement	351.2	1.0	–2.6
Residual Fuel	625.2	18.3	–17.4
Sand, Gravel	325.0	1.1	3.5
Sanitary Papers	384.3	1.1	.9
Soaps, Detergents	275.2	.3	–.3
Sporting Goods	208.6	.6	2.5
Steel Mill Products	353.3	.1	1.9
Struc. Clay Products	312.2	.3	3.7
Switchgear	287.2	.3	1.3
Tires, Tubes	232.0	–.3	–1.8
Transformers	236.5	0	.9
Trucks	345.9	–.3	1.6
Valves	108.0	.3	1.7
Wire, Cable	204.8	–.3	–.9
Wiring Devices	379.3	–.1	2.5

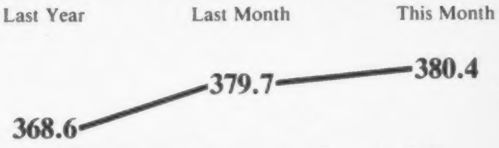
At-A-Glance Changes

MUNICIPAL COST INDEX



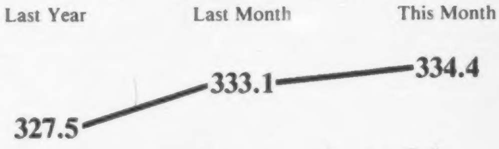
Percent Change From Last: Month **.4** Year **1.9**

CONSTRUCTION COST INDEX



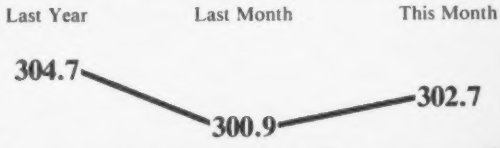
Percent Change From Last: Month **.2** Year **3.2**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.4** Year **2.1**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.6** Year **–.7**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Percent Change From: Last Year
Receipts	629.1B	2.9	7.7
Federal Grants	97.7B	9.5	–3.8
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	–6.0
Services	387.4B	2.3	8.0
Structures	309.8B	2.3	7.6
Salaries, Wages	64.8B	–2.4	18.7
Surplus	64.0B	8.7	7.6
Employment	14.049M	.36	2.4

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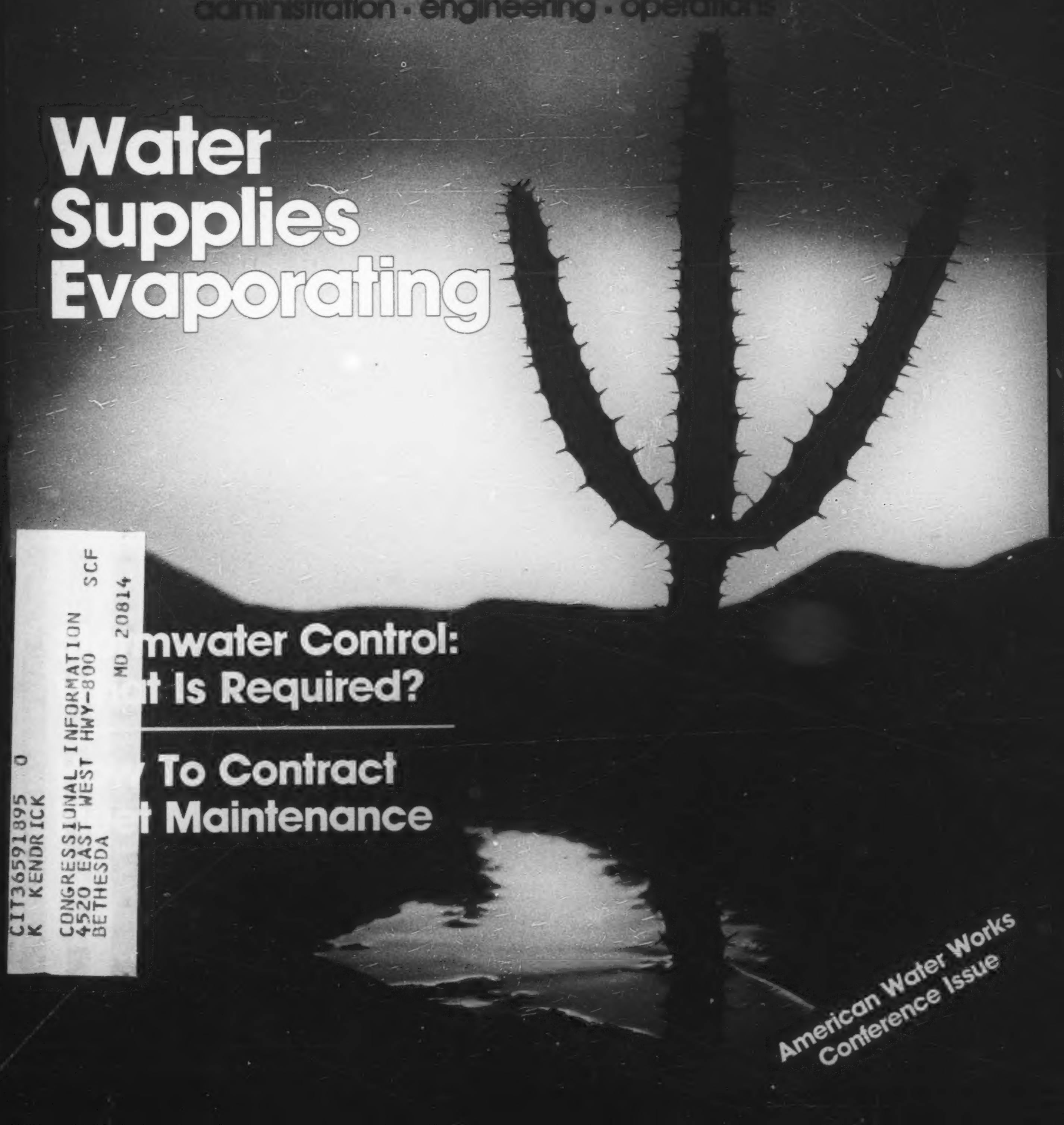

Water Supplies Evaporating

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American Water Works Conference Issue

AMERICAN CITY & COUNTY®

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June 1987 Vol. 102, No. 6

COVER STORY

26 **Water Supplies Evaporating?**

Cover photo by Double Vision, Atlanta

The experts say no, but shortages could occur in many areas. Suppliers will have to develop new water sources, protect current ones and implement conservation methods. ☐ **28** New Jersey Project Overcomes Obstacles ☐ **30** Little Seneca Lake Meets Emergency Supply Demands ☐ **32** Water District Tries Wellness Program ☐ **34** Tidewater Area Struggles Under Water Constraints ☐ **40** Recharge Saves Water For a Not-so-rainy Day ☐ **44** Liners Promote Groundwater Protection ☐ **46** Wastewater Reuse Protects Kissimmee Water Resources ☐ **48** Product Review: Water Supply

FLEET

50 **How to Contract Fleet Maintenance**

If privatizing equipment maintenance is to be successful, the fleet manager will have to attract qualified contractors, deal with displaced employees and sell the idea to superiors. ☐ **52** Repairs and Personnel Are Top Fleet Woes ☐ **54** Equipment Rentals Expected To Increase

WASTE-WATER

58 **Stormwater Storm Clouds**

Changes in federal law will compel hundreds of cities to build stormwater management systems by 1992, with millions of dollars spent on relatively untested control technologies. ☐ **60** Chlorine Oxidation Benefits Florida Treatment Plant ☐ **62** Effluent Water Solves Irrigation Dilemma ☐ **64** Morton Installs New Pumps To Solve Harmonic Problems ☐ **66** Ohio Revolving Loans Provide Model ☐ **67** Corrosion Is the Enemy ☐ **68** Developing Effective Financing Strategies

ECONOMIC GROWTH

72 **Convention Centers Require Research**

Not every community should build its own convention facility, but for those cities where such a program makes sense, there are several planning steps to heed. ☐ **73** Restoration Improves Hanford's Downtown

SPECIAL REPORT

74 **TANs Remain Viable Option**

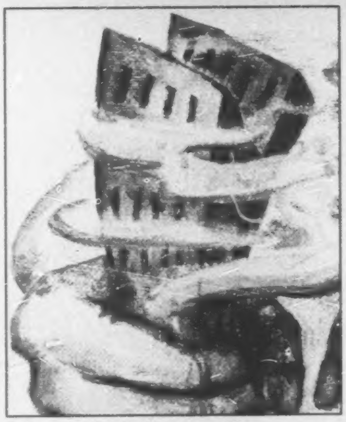
While tax reform will make tax anticipation notes less profitable, investigating and using the notes when appropriate still makes sense.

COLUMNS

10 **Inside Washington**
12 **Financial Management**
14 **Office Automation**

58 **Managing Stormwater**

26 **Protecting Water**



10 **Air Pollution Deadline**

DEPARTMENTS

16 **Across America**
6 **Calendar**
89 **Classifieds**
4 **Editor's View**
92 **Municipal Cost Indexes**
78 **New Products**
8 **Newsmakers**
85 **Professional Services**
76 **Resource Recovery**
82 **Services & Contracts**
88 **Video & Print**

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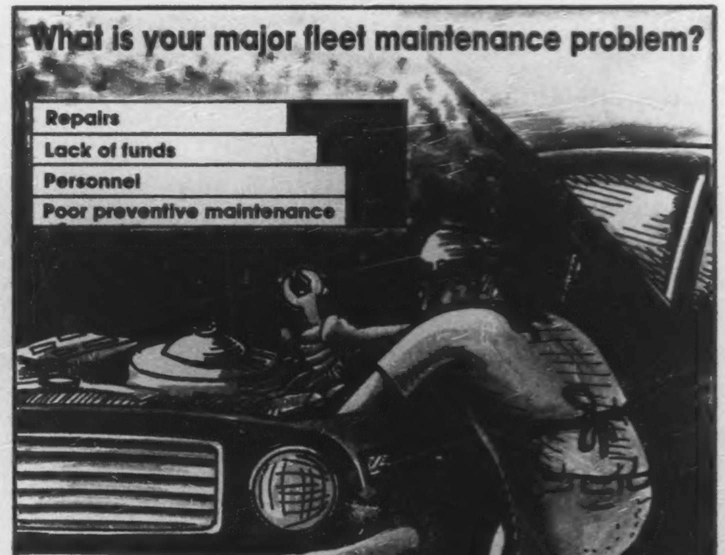
How to Contract Fleet Maintenance

If privatizing equipment maintenance is to be successful, the fleet manager will have to attract qualified contractors, deal with displaced employees and sell the idea to superiors.

By K. Dennis Klingelhofer and Jeff Gaber

Illustration by Alex Hueso


What is your major fleet maintenance problem?
Repairs
Lack of funds
Personnel
Poor preventive maintenance

As local governments look for ways to provide services more economically and efficiently, contracting out fleet maintenance equipment is becoming increasingly common. Reasons for the increased interest include continuing budgetary constraints — for maintaining and replacing equipment that has outlived its usefulness, mounting political pressure and public interest in privatization, and increasing pressures from private contractors interested in providing fleet maintenance services.

The concept of contracting fleet maintenance is not a new idea. Some local governments have been using private contractors for the past 15 years. Others have tried contracting in the past, and for a variety of reasons — usually dissatisfaction with the contractor's performance — have elected to return to an in-house maintenance operation.

This leads to important questions: Why does the degree of success of privatization vary from one engagement to another? If contracting fleet maintenance works well for one city, why does it fail in another? And perhaps more importantly, what can the fleet manager do to be successful in a privatized effort?

A review of the successes and failures in contracting for equipment maintenance has led to the development of recommended guidelines to follow when considering contracting fleet maintenance.

One government official was heard to say, "I got rid of fleet maintenance to a private contractor so I don't have to listen to equipment users complain." Another commented, "I don't have to worry about stocking specialty parts, my contractor is responsible for that now." These statements are precursors of failed privatization efforts. Fleet managers never "get rid of" any responsibilities. In privatization, the fleet manager simply is using an alternative resource to in-house forces.

This alternative has characteristics affecting performance, just as in-house resources do. These characteristics must be appreciated as the cost/benefit of contracting for fleet maintenance is evaluated. Direct communication with various contractors to solicit their viewpoints is recommended.

The fleet manager's

Repairs and Personnel Are Top Fleet Woes

Repairs, personnel problems and a lack of funds are the leading fleet maintenance problems, according to respondents of a March survey by *American City & County*. Nearly 15 percent of all respondents say repairs are the major concern, with another 13 percent bemoaning the lack of preventive maintenance and nearly 8 percent citing old equipment.

AC&C Survey

Personnel problems also figure prominently. For cities or counties with more than 100,000 residents, personnel is the top problem, being named by approximately 19 percent of the respondents. Pay scales were mentioned specifically. One fleet administrator from a Northeast county of more than 250,000 people says, "Attracting qualified help at the low salaries offered by our county is the biggest problem."

The general service director of a Western city with a population between 100,000 to 250,000 says adequate pay to keep good mechanics was the biggest headache. Understaffing is the major fleet maintenance problem for the public works director of a large Southeastern city, who adds that political hiring of unqualified mechanics exacerbates the problem.

Not surprisingly, lack of funds is a constant problem. Again, communities with larger populations find money particularly hard to come by. Almost 16 percent of the respondents from local governments with more than 100,000 residents name money as the top problem, whereas less than 12 percent of respondents of smaller communities cite money as the main obstacle.

Computerization of the fleet maintenance program varies widely between communities with more or less than 100,000 people. Eighty percent of survey respondents from small communities report their fleet programs are not computerized, whereas larger departments rely more heavily on computers. Slightly more than half of the respondents from cities or counties with more than 100,000 people say their programs are computerized.

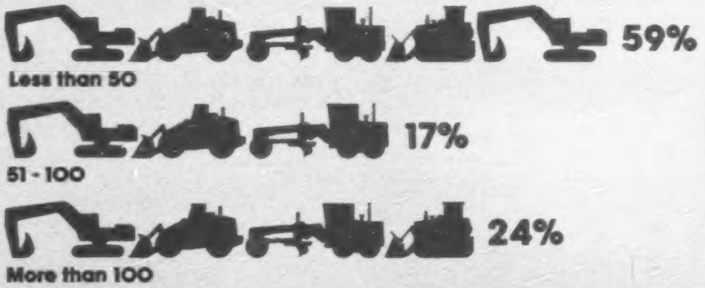
The overwhelming majority say maintenance chores are performed in-house. Only 5 percent report using contract maintenance, although several communities use a combination of services.

The survey reveals a wide variation in the number of vehicles in municipal fleets. For communities with less than 100,000 residents, 23 percent have one to 15 vehicles, 17 percent have 16 to 25 vehicles, 17 percent have 26 to 50 vehicles, and another 17 percent have between 51 and 100 vehicles. The remaining 26 percent maintain more than 100 vehicles.

—John Sequerth

Fleet Sizes Vary Widely

For communities with less than 100,000 residents, a recent *American City & County* survey shows the number of vehicles in municipal fleets fluctuates greatly.



goal is to provide equipment users with a dependable, well-maintained fleet at the lowest cost. The contractor's goal is a satisfied customer and a fair return on investment. These are not mutually exclusive goals, but it takes a lot of planning and preparation prior to signing a contract.

Goals and objectives should be set. This is an intregal part of the planning process, whether the work is done in-house or by a contractor. When considering preventive maintenance services, minimum acceptable availability rates and unscheduled repair performance, make realistic goals. Is it realistic to expect a contractor to maintain a 95-percent availability rate for street sweepers if, historically, the best the in-house staff maintained was 70 percent? Define needs and what can be afforded, communicating these needs to the contractor during the proposal process.

Equipment users should be included when planning fleet contracts.

A contractor probably can meet any requirements if the financial award is great enough, but is it worth the cost? Since one goal in contracting is cost reduction, the performance requirements asked of the contractor should be calculated carefully.

Some fleet maintenance goals and objectives often are difficult to define, since priorities change frequently based on the needs of users. Communication between the fleet manager and the central garage operation is difficult enough; place a contractor in the system and the communication problem is compounded.

Pre-solicitation planning is crucial. Contractors need all the information possible to prepare a proposal and submit a bid. If the fleet manager has not done the homework, critical valid user needs might not be satisfied. This dissatisfaction can lead ultimately to contract disputes. Equipment users should be included when planning fleet maintenance contracts, since communication is essential to a successful maintenance operation. To redefine performance criteria in mid-contract is confusing and can lead to a poor relationship between parties.

Since contractors are being asked to bid competitively on fleet services, potential contractors should be given as much historical information as possible. If the historical costs have been identified, the fleet manager will have a valid basis for evaluating in-house vs. contract operations. The clearer the picture given to contractors, the more competitive they can be. All contractors need to know how many vehicles are in the fleet and the condition of each piece.

Creativity needed

The final chapter of the book on privatization has yet to be written. No one has all the answers, and what succeeds for one city might fail in another. Traditional approaches to contracting, developed from procuring supplies and construction services, are not always applicable to equipment maintenance contracting.

As fleet managers move forward with privatization, several techniques will help open the door to better ideas.

Fleet managers probably will find they must be openly aggressive in soliciting responses. Traditionally, structured procurement methods tend to restrict the flow of communication between the agency and potential contractors. Soliciting the input of potential contractors early in the process is recommended. These contractors will initiate creative ideas that could help reduce contract costs and define equitable performance standards. Pre-solicitation meetings to explain the local government's goals through privatization are helpful.

Keeping an open mind about the scope of privatization is important. The department's specific needs may be best served by widening or narrowing the scope of contractor services. Options in contracting fleet maintenance services include:

- engaging a contractor to provide only repair and maintenance services, under the tight control of government inspectors and shop schedulers (the General Services Administration is letting several such contracts);
- hiring a contractor to perform maintenance, repair and basic garage services; and
- engaging a contractor to provide maintenance, repair and total fleet management services, including replacement planning, fleet data processing, specification and fuel management.

Soliciting input from potential contractors is recommended.

If contracting the maintenance of equipment fleet is to be successful, a number of potential problems will have to be overcome. These can include how to attract potential contractors, what to do with displaced employees and how to sell the idea to the city manager or elected body. Solving these problems often requires creativity by the fleet manager.

Local governments traditionally have used lump-sum or firm-fixed-price contracts for procuring services. While this type of contract provides the fleet manager with the exact cost of contracting for maintenance at the beginning of the contract period, it also places the greatest risk on the contractor since the contractor must assume full-cost responsibility for fleet maintenance. Generally, the result is high contract costs or a lack of bidders.

In order to encourage potential contractors to submit bids and to encourage a more competitive environment, fleet managers are looking at new types of contracts such as target-cost-incentive contracts. This type of contract provides an incentive to the contractor to manage effectively and reduce costs in order to increase fees. The goal in deciding which type of contract to use and in writing the performance specifications is not to limit the contractor's potential profit, but to ensure the equipment fleet is maintained at the desired level. This will encourage a competitive contracting environment.

The decision to contract equipment maintenance often means a reduction in the in-house work force. This is one of the most controversial aspects of privatization, stopping the contracting momentum in many cities. Fleet managers have dealt with this issue in a variety of ways. They have transferred displaced employees to other governmental agencies, reduced the in-house force through attrition and required the contractor to hire displaced employees.

Equipment Rentals Expected To Increase

Changing conditions in the construction industry will force construction equipment users to take a harder look at equipment rentals. Four major trends will influence the shift: smaller projects, tax law changes, increased contractor sophistication and increased competition in the rental industry.

One primary factor creating an increased demand for rental equipment is a change in the types of construction jobs available. "Many of the construction jobs in the coming decade will continue to consist of repairing this country's infrastructure," says Marv Zoromski, manager of JI Case's major and national construction equipment accounts. "As the trend toward these smaller and shorter jobs continues, contractors will reduce the size of their owned fleets and depend increasingly on rental equipment.

"Not only will this ensure they have the proper equipment to complete a job, it will also ensure they will not have idle equipment in between projects."

He says smaller equipment will remain a popular choice for contractors, but as contractors cut the size of their owned fleets, they also may begin to look for larger rental equipment.

Changes in the tax laws are expected to affect the rental equipment industry. "Many rental yard owners have viewed the shift away from depreciation write-offs in a negative light," Zoromski says. "Many rental yard owners are beginning to see the negative effects of tax law changes may well be overcome by a significant increase in business for rental yard operators."

Another factor affecting the rental market is the increasing financial sophistication of contractors. More contractors are viewing equipment rental as an effective tool for controlling cash flow in their operations. Zoromski says contractors realize if a piece of equipment is sitting idle between construction projects, they may be better off financially renting the equipment as needed. According to a Hertz Equipment Rental study, renting is the most cost-efficient option unless the customer is using equipment more than 65 percent of the time. Above 65 percent, customers should consider ownership.

Zoromski says increased competition in the rental industry has pushed rental prices down and increased equipment availability. The result, he says, is a wide range of affordable equipment, allowing more contractors to bid on projects. □

Finally, regardless of how attractive privatization can be financially, the idea will have to be "sold" to others.

Monitoring results

After the contracting has been accomplished, monitoring and evaluating the results critically is important. This evaluation must cover several areas, including maintenance quality, responsiveness, cost/benefit vs. in-house forces, and the effects on management workload. If fleet managers have a difficult time evaluating factors currently performed by in-house mechanics, evaluating contractor-performed results will be even more difficult.

In addition to evaluating the success of the contracting effort from the fleet manager's perspective, equipment users also should evaluate the contractor's performance. If equipment users were involved during the planning phase, their needs already should have been stated in measurable terms. Their evaluation should be based on the needs they stated prior to the start of work and included in the contract.

The experience of other fleet managers has demonstrated there are potentially significant rewards to be reaped by governments using privatized equipment maintenance functions. Success, however, does not come any easier when work is performed by a contractor than it does when work is performed by government workers. The fleet manager who wishes to use private contractors must be prepared to commit ample resources to manage the privatization effort to a successful end. ☐

K. Dennis Klingelhofer is regional director for Roy Jorgensen Associates Inc., Gaithersburg, Md., and Jeff Gaber formerly was Florida manager for the firm.

Paris To Host Intermat '88

Intermat '88, the International Equipment and Techniques for Civil Engineering and Construction Exhibition, has been scheduled for May 16-21, 1988, in Paris, France. The every-third-year show will feature more than 200,000 square meters of exhibition and demonstration space for public works and construction equipment.

Local government officials from the United States and U.S. companies interested in exhibiting at the show may obtain further information by writing to: Intermat '88, c/o American City & County, 6255 Barfield Road, Atlanta, Ga. 30328. ☐

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Mike Mirabelli
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The **Municipal Cost Index** for June continued its steady climb, rising to 344.6. The **Construction Cost Index** rose slightly to 380.8, while the **Consumer Price Index** increased by more than a point to 335.9. The **Producer Price Index** rose only .1 to 302.8.

Energy products showed the largest declines in this month's marketbasket, with prices for diesel fuel, fuel oil no. 2, natural gas and residual fuel falling. Although liquefied petroleum (LP) gas fell more than 21 percent from last year, it gained nearly 6 percent over last month.

— Compiled by John Sequerth

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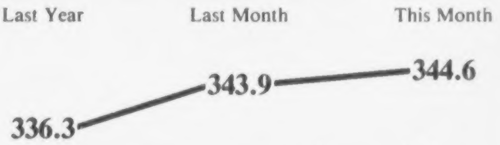
Struc. Clay Products	312.8	.2	2.7
Switchgear	291.0	1.3	2.5
Tires, Tubes	231.3	-.3	-2.0
Transformers	237.0	.2	1.2
Trucks	345.8	0	1.0
Valves	108.1	.1	1.8
Wire, Cable	205.3	.2	-.7
Wiring Devices	379.6	.1	.8

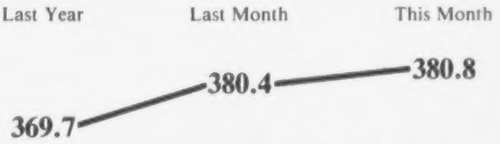
At-A-Glance Changes

MUNICIPAL COST INDEX



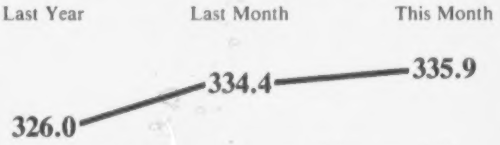
Percent Change From Last: Month **.2** Year **2.5**

CONSTRUCTION COST INDEX



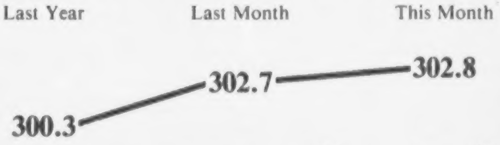
Percent Change From Last: Month **.1** Year **3.0**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.44** Year **3.0**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.03** Year **.83**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	629.1B	2.9	7.7
Federal Grants	97.7B	9.5	-3.8
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	-6.0
Services	387.4B	2.3	8.0
Structures	309.8B	2.3	7.6
Salaries, Wages	64.8B	-2.4	18.7
Surplus	64.0B	8.7	7.6
Employment	14.049M	.36	2.4

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JULY 1987

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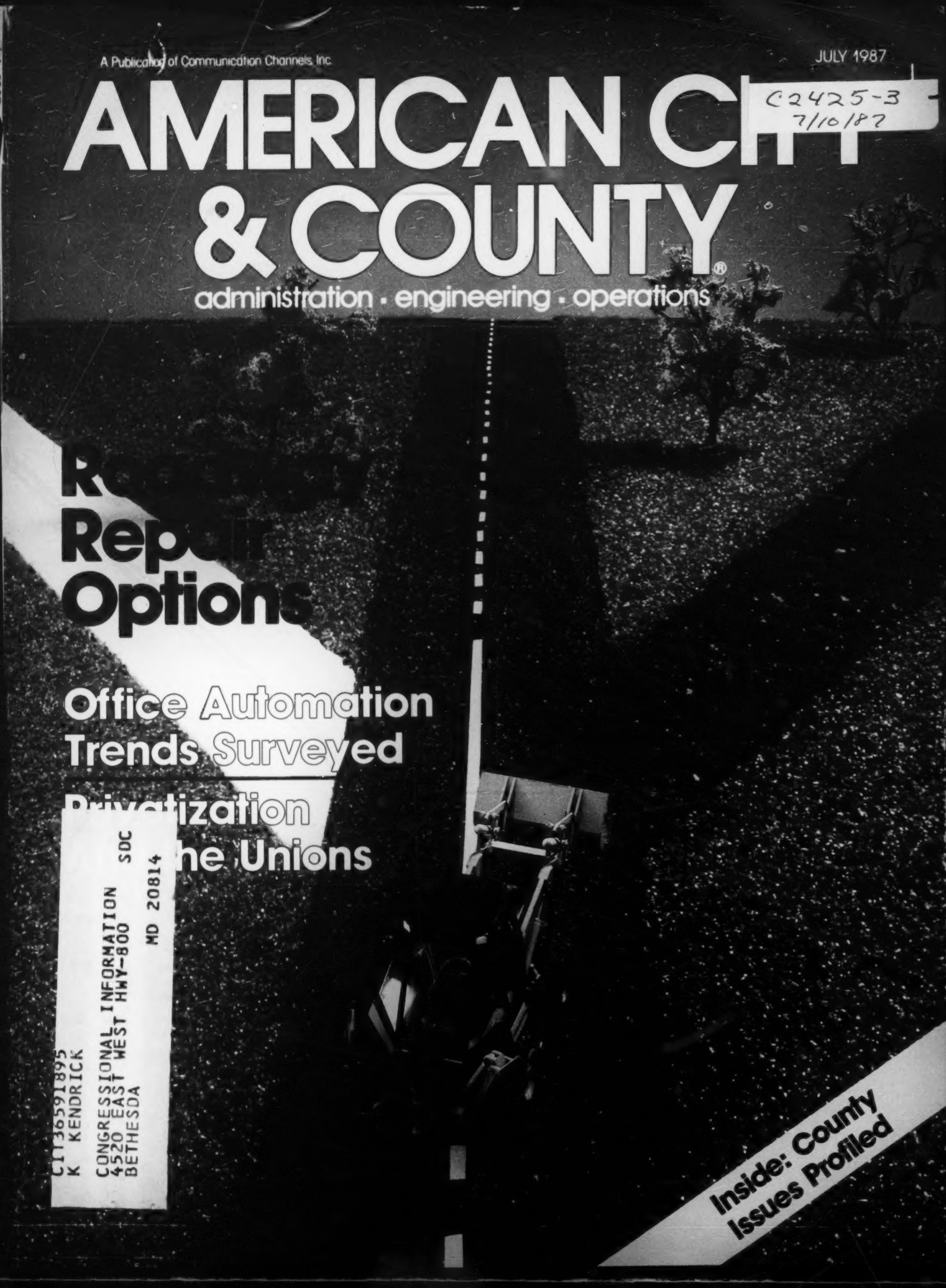

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Office Automation Trends Surveyed

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Inside: County Issues Profiled

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July 1987
Vol. 102, No. 7

COVER STORY

28 **Street Smart**
Cover photo by Double Vision, Atlanta
Older roadways prompt public officials to investigate cost-effective repair options. ☐ **29** The Future of Commonplace Things ☐ **32** Valued Street Trees Saved in Cincinnati ☐ **34** Lakeway Drive Project a Success for Bellingham ☐ **38** New Bridge Brightens Economic Future ☐ **42** Evaluating Corrugated Metal Structures

OFFICE AUTOMATION

46 **Survey Monitors Computer Use**
This exclusive survey of city and county officials shows a trend toward computerization of nearly all local government functions. ☐ **48** Fort Collins Develops PBX-based Network ☐ **50** Bellevue Converts to Distributed System ☐ **54** Amite City Computerizes Billing System ☐ **58** Product Review: Office Equipment

COUNTIES

60 **On Their Own, Counties Face Challenges**
With more local control but less federal money, county officials must find alternate resources. ☐ **62** Broome County Addresses Infrastructure ☐ **64** South Carolina County Addresses Sewer Needs ☐ **65** Clinton County Lures Canadian Industry

EMPLOYEE RELATIONS

68 **Privatization and the Unions**
As more services are subcontracted, employees are adding privatization to other vital issues. ☐ **70** Problem Employees Need To Know the Regulations ☐ **72** Labor Contract Tied to Economic Status ☐ **74** Phoenix Bids on Own Projects To Keep City Unions Working

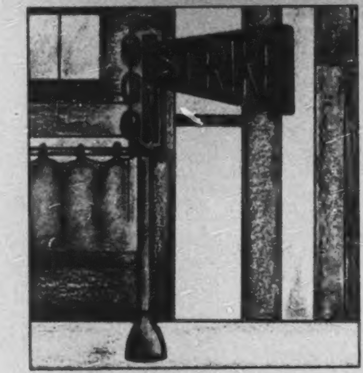
COLUMNS

10 **Inside Washington** . . . National League of Cities sets campaign agenda.
12 **Financial Management** . . . Lease-purchase arrangement gives city added financial flexibility.
14 **Office Automation** . . . Micrographic reader/printers help raise office productivity levels.

Special: Software Marketplace — Page 88

60 County Challenges

46 Computer Survey



68 Managing Employees

DEPARTMENTS

19 Across America
6 Calendar
89 Classified
4 Editor's View
92 Municipal Cost Indexes
78 New Products
16 Newsmakers
86 Professional Services
76 Resource Recovery
82 Services & Contracts
88 Video & Print

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ACROSS AMERICA

GFOA Conducts 81st Conference

Louis Hayward was looking for gold. Not the shiny, sure-to-cause-a-stampede kind of 1896 and California, but the gold inherent in good ideas that help save public funds in financial planning and execution. Hayward, an official with the Massachusetts Department of Revenue, was picking the brains of his peers in the nation's capital May 31 to June 3 during the 81st annual conference of the Government Finance Officers Association (GFOA). Hayward knew the welcoming remarks of Washington's Mayor Marion Barry Jr., were true — "If your financial house is not in order, it distorts every other house you are trying to build."

More than 5,000 delegates and guests attended this year's conference, highlighted by remarks from former Virginia Gov. Charles Robb, noted urban developer James Rouse, and former White House spokesperson Larry Speakes. The conference theme, "The Finance Officer as Communicator," was reflected in a number of seminars on press relations and communicating financial information. Other seminars covered the impact of tax reform, municipal bond options, investment strategies, liability insurance, and pension and benefits programs.

"I get a lot of ideas from this conference for our operation in Massachusetts," Hayward says. "We try to take the best ideas of other communities and use them to improve what we do."

Rouse spoke to a general-session audience on America's severe poverty problem, and the efforts of his Enterprise Foundation in discovering and implementing creative solutions to the nation's low-income housing needs. "We've seen a new life, a new sparkle, in American cities in the last dozen years," Rouse said, reflecting on urban redevelopment successes in Boston and Baltimore. "The great dynamic activity of the next 20 years will be in the inner city."

But America has a "cancer" in the inner city, Rouse said, characterized by severe poverty, homelessness, crime, unemployment, and drug and alcohol abuse. "There must be federal money to assist cities and states to promote private activity," Rouse said, emphasizing the necessity of local responsibility for initiating and financing housing programs.

"Large government housing projects are not the answer," he added. "There are answers. The future American city is one that works for all its people, with decent housing for all."

At a session on Washington developments, John McEvoy of Kutak, Rode & Campbell told a standing-room-only audience, "The Reagan Revolution is over. Congress will do little in the next 15 months. There will be some dismemberment of Gramm-Rudman-Hollings because you cannot control the deficit by setting pie-in-the-sky numbers. There will be tax increases (indirect) next year and watch out for increased pressure on tax-exempt bonds."

During the conference, the GFOA and Atlanta announced a legal challenge to two provisions of the 1986 Tax Reform Act. At issue are federal restrictions on the use of arbitrage and the alternative minimum tax.

The GFOA also named its officers for the coming year. Patrick C. Glisson, director of finance for Atlanta, was elected president, while Frank L. Greathouse, director of the Division of Audit for Tennessee, was named president-elect.

Glisson has been a member of the GFOA's Executive Board since 1984. Before becoming Atlanta's finance director in 1982, he served five years as finance director for DeKalb County, Ga.

Greathouse also has been on the Executive Board since 1984. He previously chaired the National Council on Governmental Accounting and is immediate past chair of the Governmental Accounting Standards Advisory Council.

GRCDA Names Landfill Winners

Attempting to demonstrate landfills can be good neighbors and environmentally acceptable, the Governmental Refuse Collection and Disposal Association (GRCDA) initiated the Landfill Excellence Competition. The landfills were judged on aspects such as siting, design, operation, environmental protection and post-closure use.

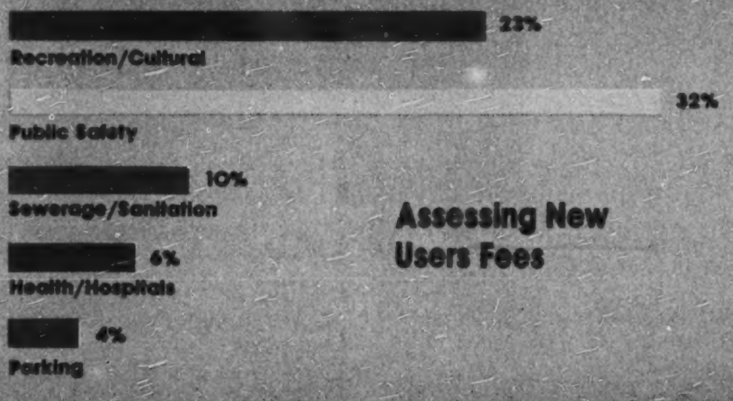
Excellence Award winners were the Delaware Solid Waste Authority's Southern and Central solid-waste facilities, and John Sexton Corp.'s Miller Road sanitary landfill in Saginaw,

Survey Spotlight

The practice of charging fees for basic public services and for the use of public facilities is increasing, according to a survey of 400 U.S. cities conducted by the U.S. Conference of Mayors and Arthur Young & Co. Survey data show nearly 70 percent of the responding cities have instituted user fees within the last 10 years and 15 percent have introduced new fees within the last five years.

While local governments traditionally have charged user fees for recreation, sewerage, sanitation and utility services, respondents say the need for additional income has forced them to add fees for a variety of recreational services, such as ball fields, picnic grounds and swimming pools. Fees also have been introduced for more specialized public safety services, including special police patrols and accident reports. These fees, however, are motivated more by a need to regulate service demand or curb abuse and waste, respondents say.

Aware of the possibility fees may discourage members of low-income groups from using fee-supported services, city officials answering the survey say this has not occurred for 80 percent of those responding.



Assessing New Users Fees

Survey Monitors Computer Use

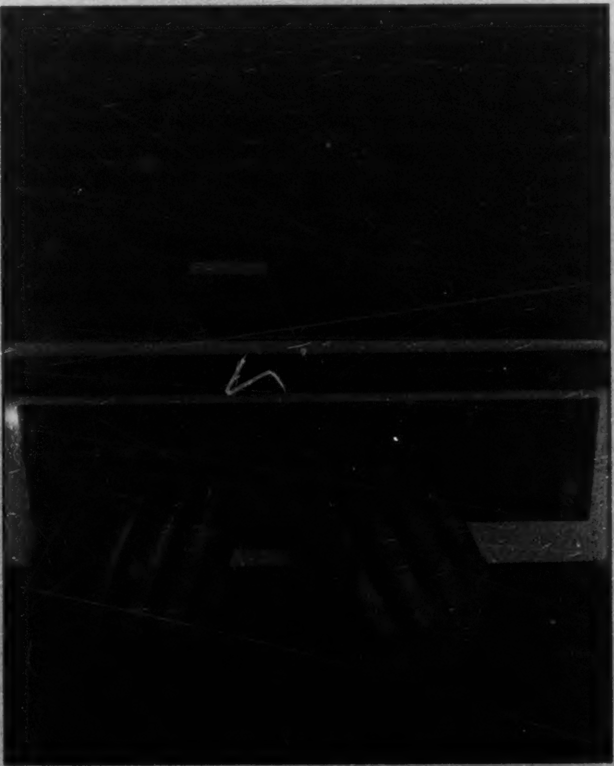
An exclusive *American City & County*/Hewlett Packard survey of office-automation trends in local government says computerization is spreading to nearly all municipal functions.

By John Sequerth, Managing Editor

Short on cash and out of milk, the man drives toward a nearby plaza. Stopping at the bank, he inserts a plastic card into the automated teller machine, pushes buttons step-by-step and accepts the money. As he drives to the supermarket, a red light flashes on the dashboard, indicating low fuel. After filling his gas tank, the man enters the grocery store, picks up a gallon of milk and heads for the express checkout. The cashier nonchalantly pulls the milk over a window on the counter. A green light blinks and the register speaks, "One. Ninety-nine." The purchase has been logged automatically for store inventory records.

Computers pervade nearly every aspect of life — personal, commercial and governmental. According to the annual *American City & County* office-automation survey, co-sponsored by Hewlett Packard (HP), nearly 90 percent of the governments surveyed have inhouse computer equipment. For communities with more than 100,000 residents, the figure rises to 98 percent.

The survey was sent to 1,000 readers of *American City & County*, selected randomly by computer, naturally. More than 25 percent answered the questionnaire. Approximately 87 percent of the respondents represent cities, towns or villages, with 13 percent working at the county level. Of those from cities, 76 percent live in communities with less than 100,000 residents. The county sampling is more evenly divided, with 47 percent of the respondents from counties with less than 100,000 people and 53 percent from larger counties.



Respondents represent all areas of the nation: the Northeast and Mid-Atlantic states (25 percent); Southeast (17 percent); North Central and Midwest (30 percent); Southwest (12 percent) and West (16 percent).

The survey questioned readers on the types of office and computer equipment their communities have, areas of use, budget plans, productivity improvements and future trends.

Personal computers (PCs) are the most common type of in-house equipment, with 52 percent using PCs. Robert Schneider of Digital Equipment Corp. says the proliferation of PCs has led to a trend toward networking. Since local governments have made a considerable investment in PCs, "they want to get more out of their equipment," he says. "They have the opportunity to use a PC as a window to a larger system. With the PC, you can build indefinitely."

According to the survey, 52 percent of the respondents have not yet linked PCs. Nearly 14 percent of the respondents say their communities have between two and 25 PCs networked, while 34 percent have more than 25 PCs linked in a system. Networking is more prevalent in larger communities. Forty-four percent of the respondents from cities or counties with more than 100,000 people say they have 25 or more PCs linked.

David Norman, chief executive officer for Businessland Inc., a large retail chain specializing in PCs, says the demand for networking is on the rise. "Clearly, connectivity has arrived, and in 1987, we will see continued growth in the connectivity of personal computers," he says. "We will also see the true implementation of voice and data integration beginning to happen in the office."

> *"Eventually, cities will be linked with distant databases."*

Gresham, Ore., has linked all seven city departments to two Digital VAX computers. The city has connected 130 micros, terminals and printers, as well as 35 PCs, enhancing communication among all areas of city government. Gresham has an extensive electronic mail system, connecting department heads with the city manager's office. "Our system allows fast-track decision-making," says Mark Kemper, director of data processing, "and eliminates telephone tag. It helps motivate our employees."

Kemper says the computer linkage absolutely was necessary. Gresham, which borders Portland on the east, is "growing by leaps and bounds," he says. "Last year, we had 34,000 people. This year we have 47,000, and by next year, the population will be 56,000." The city is annexing unincorporated county land, and the ability to share information quickly is important, he adds.

"We have a relatively young and motivated staff throughout the city," Kemper says. "There has been great support for the system and almost everybody was anxious to use it."

Most networking projects occur after

Fort Collins Develops PBX-based Network

Like other fast-growing cities, Fort Collins, Colo., must cope with the various demands growth places on a city government and its computer resources. The government employs 850 people in 11 departments, and 44 percent are considered information workers. To serve its 88,000 residents better, the city needed a data communications network to make vital information available in a timely manner.

"Building an efficient and economical system requires a lot of planning and close work with vendors," says Marsiea Dahlgren, director of information and communication systems (ICS) for Fort Collins. In addition to service and support, integration, communications, economy and a wide range of capabilities were essential considerations for the network. Because most city employees lack computer experience, ease of use also is an important factor.

"Service and support are critical to success," Dahlgren says. "Without it, the transition to office automation would have been much more difficult."

In the initial planning stages, specialists from Hewlett-Packard (HP) assisted the ICS team in establishing goals and identifying resources for the new system. The team then chose certain employees to participate in training programs for special applications, such as word processing and electronic mail. These employees then trained and supported other users. A new information management system was designed, using existing equipment and implementing a vital communications link based on a digital PBX rather than networking software. Both telephone and data transmissions are routed over phone lines.

Criteria for the computer system emerged from the initial planning process. "We wanted intuitive software with good documentation," Dahlgren says. "If the software is difficult, then people simply will not use it, negating any possible productivity gains. No matter how economical the system is initially, if it isn't used, you lose in the long run."

Economy was a definite concern. An analysis performed prior to implementing the system projected a 650 percent return on investment within five years. Dahlgren says the projections are proving to be correct. One City Council member estimates electronic mail has reduced telephone tag by one-third.

In the past, approximately 8,000 documents were created monthly, ranging from memos to a variety of forms and official papers. The city estimates the cost of a simple memo has been reduced from $8.43 to 83 cents with electronic mail.

According to a survey of city workers, 68 percent say they now can complete their jobs in less time; 31 percent are performing new functions due to productivity gains; and 65 percent are obtaining information previously inaccessible, resulting in more informed decision-making.

Integration was another major selection criterion. Since the city already had computers, incorporating these into the new system was important to avoid excessive costs and loss on investment. In addition, portable and personal computers from different vendors and third-party software had to be accommodated.

The city also requires a broad range of applications. All departments use database management, spreadsheet capabilities, word processing and electronic mail, but some departments require other capabilities, such as graphics. Communication is the key element required to tie the various computers and departments together. More than 210 personal computers communicate through the network, including PCs from HP, Apple, IBM, Compaq and other IBM compatibles.

The city's Water and Wastewater Utility requires a broad range of applications, including graphics and heavy database usage. Many applications run on powerful workstations, but three laboratory computers and eight portable models also are used.

The department maintains a huge database, listing every piece of equipment and plant in the system and its maintenance history. In addition, a schedule automatically alerts workers when maintenance is due. A large mapping system tracks every water and sewer line in the metropolitan area, allowing underground leaks or breaks to be located quickly. Mike Smith, the utility's director, says the mapping system is updated frequently. "With the new system," he says, "we can produce maps significantly faster than we could previously.

"Our engineers also have CAD and graphics capabilities, and we are expanding those and other applications rapidly," Smith says. "We plan to become fully automated in the not-too-distant future. The new computer system will enable us to provide our customers with the same kind of service usually found only in the largest cities." ☐

the local government has acquired several PCs in various departments. In Augusta, Maine, however, a new City Hall is being built with the network planned from the outset. Each workstation in the new building will have an outlet with four options — telephone, high- and low-speed computer or video camera/television connections. The facility is being designed as an "intelligent building," giving city employees added flexibility.

When questioned about key issues facing the respondents' department/organization in relation to information technology and office automation, 33 percent name the integration of personal computers as most important. Adequate user training is the most frequent response, with 44 percent calling it a priority. Information access and distribution also were rated highly, with 41 percent calling distribution a major challenge.

While personal computers are the most common pieces of office automation equipment, 42 percent of the respondents say their local government has mainframe computers, 40 percent use word processors, 31 percent have microcomputers and 28 percent utilize minicomputers.

Since IBM dominates the PC market, seeing the company named as the primary hardware supplier by 48 percent of the survey respondents is not surprising. Other companies named include Unisys (8 percent), NCR (6 percent), Digital (3 percent) and HP (3 percent).

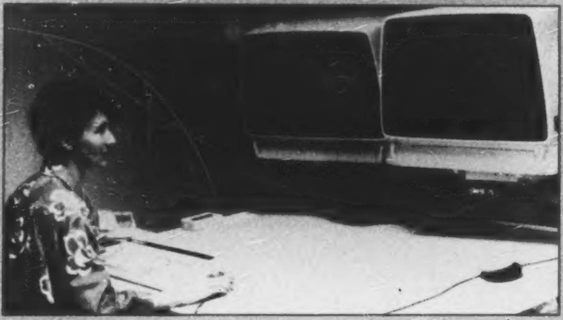
Improving productivity

Why computerize? Survey respondents say using computers boosts productivity. Although 24 percent of those answering say productivity has in-

Bellevue Converts to Distributed System

After a successful experience with computerized mapping, Bellevue, Wash., officials decided a highly interactive system could offer more benefits than its mainframe-oriented, centralized approach.

Located near Seattle, Bellevue has 82,000 residents within 26½ square miles. The city's service area, however, extends into unincorporated King County, covering 40 square miles. Incorporated in 1953, Bellevue had five independent water and sewer districts until 1972. When the city annexed those districts into one municipal department, five billing and accounting systems had to be consolidated — a challenge prompting the city to purchase a Burroughs mainframe computer.


Kirsty Burt, a senior planner, accesses the attributes data, which describe land parcels.

Today, Bellevue is converting its municipal-management software from the mainframe to a network powered by clustered minicomputers. "We were very pleased with what we could do with our mapping system, which had a strong impact on our choice of an automated system for the Police Department," says Bob Parks, Bellevue's director of information services. "We could see the opportunity for increased synergy — and decided to put our software on a cluster of minicomputers. We're now beginning to see the benefits of this approach."

Bellevue's computer network includes a cluster of three Digital Equipment minicomputers, one VAX-8650 and two VAX-11/750s. All three systems interact together, and are accessed by a network of 70 terminals and about half of the 140 city-owned PCs.

One minicomputer is tied into the automated mapping and planning system (AMPS) and the other is dedicated to a maintenance and operations management system (MOMS). The 8650 is used for most system development activities, electronic mail and general purpose applications, such as polygon processing for the mapping system. Minicomputers in City Hall and at the Police and Fire Communications Center link the police records system with the "911" police and fire emergency-dispatching system.

City officials determined a mainframe computer located in City Hall would not be suited to the demands of police and fire dispatch. They wanted a computer system dedicated to police and fire emergencies networked via telephone lines to the computer system at City Hall. When the dispatcher receives a call, the system automatically flashes the name and address of the citizen calling 911 on the screen. The police dispatch system, containing the current status of all police cars, identifies the next available car to the dispatcher. When a police car is dispatched, the information is recorded. After handling the incident, the officer's report also is entered into the system. That file then is transferred over the telephone lines to the computer system at City Hall.

This system also is used by the Fire Department, which has a printing terminal in each fire station. As the dispatcher enters the pertinent data into the computer system, that information is transmitted to the fire house and each dispatched unit receives a printed copy.

The ability to share information throughout the network is one of the system's most important benefits, allowing the city to leverage its computer investment into a variety of applications. For example, now that the information base in the automated mapping system is mature, the city plans to start using it with other existing software systems.

Bellevue intends to use the mapping system for transportation modeling to solve ingress and egress problems in the downtown area. Mapping for the water, sewer and drainage systems has been digitized and entered into the map base. Another important use of the automated mapping system is the city's water-distribution management system. By using AMPS and the general purpose computer, water consumption for each zone can be analyzed, helping the community plan for future expansion of the water system and assess usage rates.

Although Bellevue has advanced equipment, the system's success depends on more than equipment alone, Parks says. "Close cooperation with user departments has been extremely important. Users have to feel computerization will be useful and cost-effective," he says. "Once a system is in place, the whole is greater than the sum of its parts. Networking can tie individual databases together to promote efficiencies that the original user departments did not foresee." □

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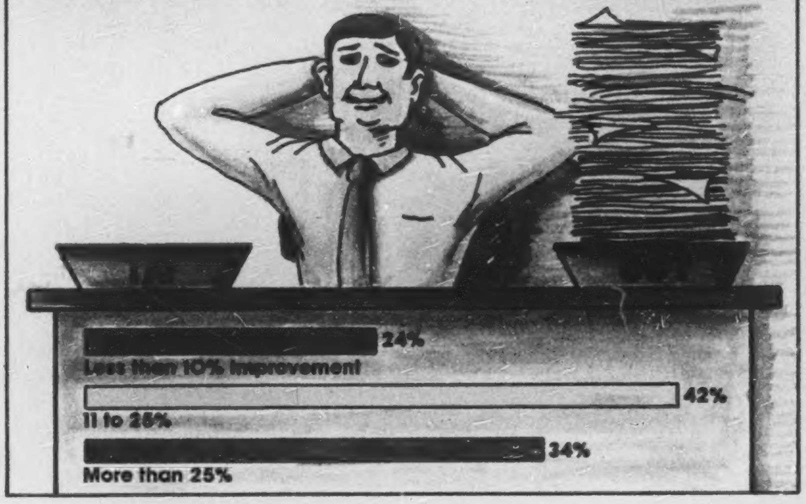
What percentage of productivity improvement has been realized?



creased by less than 10 percent, 42 percent say the improvement has been between 11 and 25 percent. Another 34 percent report productivity has increased more than 25 percent by using computers.

Computers, which were used first for administrative functions, now are being used in all areas of local government. And one of the predominant reasons is affordability. "As the costs of computing come down," Schneider says, "it becomes cost-effective to put more functions online."

While local governments may get more for their money, budget figures for computer-related expenditures remain steady. Local governments are allotting approximately the same budget amounts for computer expenditures in fiscal 1988 as they did in 1987 and 1986. For communities with less than 100,000 residents, 83 percent say $50,000 or less was spent on computer-related equipment in 1987. Sixteen percent say their community spent between $50,000 and $249,999. Only 1 percent say more than $250,000 was spent.

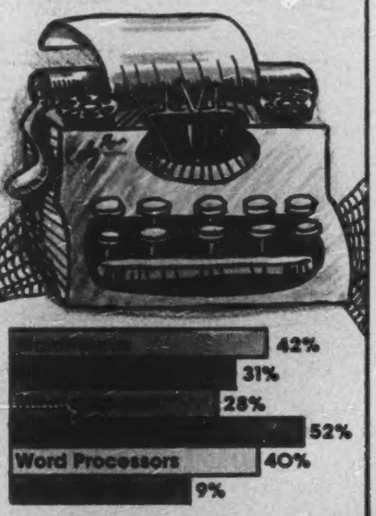
For 1988, 83 percent again plan to spend $50,000 or less, with 17 percent intending to spend more than $50,000. Larger governments obviously will buy more computer-related equipment. Forty-five percent of the respondents from cities or counties with more than 100,000 residents expect to spend more than $50,000 in fiscal 1988.

Administrative functions still are the most dominant areas for computer use. Nearly 76 percent say their communities use computers for word processing, 69 percent for personnel/payroll, 64 percent for financial planning and 40 percent for tax records.

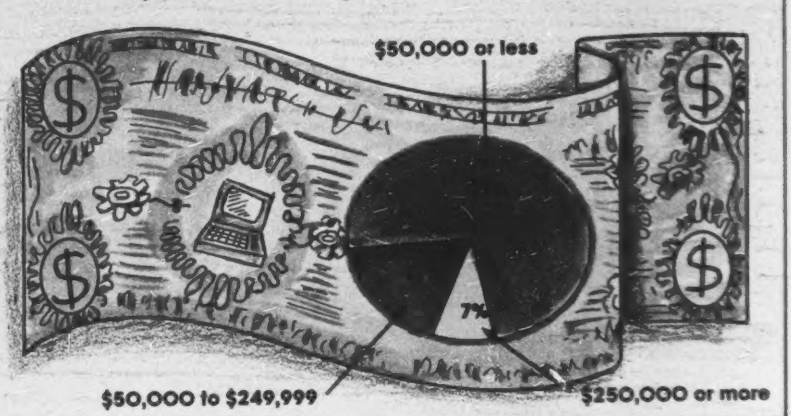
Public works areas are being computerized as well. More than 47 percent say computers are used for utility billing, 36 percent for water and wastewater operations, 24.5 percent for fleet management, 19 percent for traffic engineering and 19 percent for street maintenance. In cities and counties with more than 100,000 residents, those figures are greater. Nearly 18 percent of larger communities have computerized solid-waste collection and disposal departments, 19 percent have automated park and recreation operations, 12 percent use computers for building maintenance and security, and another 12 percent have computerized public-transit systems.

Fleet management is one application showing an increase in computeriza-

What types of computer equipment do you have in-house?



What is your 1988 budget for computer purchases?



tion, compared with last year's survey results. A software-based package has contributed to significant cost reductions in Indianapolis. "We have a comprehensive approach to fleet management," says James Garvie, administrator for the Central Equipment Management Division (CEMD). "But without the support of the data-processing system, we could not have accomplished our goals."

Garvie says computerization has helped Indianapolis save more than $500,000 annually in payroll costs. The number of CEMD employees has decreased about 35 percent since 1980, but "we increased productivity with less employees," he adds. Additional savings have been realized by cutting parts costs and reducing the number of outside contractual services.

Mike Bright, systems analyst for CEMD, says a work order is entered into the computer as each vehicle is brought to the garage for repair. Parts and labor costs are tracked by using computer codes. Any contractual charges also are recorded. After a repair is made and the vehicle has left the garage, the appropriate city department is assessed for the repair. The system also tracks employee time. CEMD is responsible for 1,800 vehicles and 1,200 miscellaneous pieces of equipment from nearly all major manufacturers.

The fleet management computer system also interfaces with an automated fuel system. This computerized function has eliminated personnel previously needed for dispensing gas to city vehicles and keeping fuel inventory.

Mapping applications

Computerized geographic mapping systems also have contributed to an increased use of computers in public works applications. This geographic database can be shared by a variety of departments. A geographic information system can include many different layers, including land-use zoning, streets, utility distribution, drainage information, housing and property boundaries.

"The real strength of a geographic system is its ability to pull together data from many sources and tie the information to features on a map," says David Sonnen of Deltasystems. "This capability lets the planner use existing databases rather than duplicating, re-

---

Amite City Computerizes Billing System

By Elizabeth Dillard, Editorial Assistant

Believing a computerized water and garbage billing system would increase efficiency and save money, Amite City, La., began investigating several different computer systems, only to find all were $40,000 more than the town's $10,000 budget. Luck was in the town's favor, however.

At nearby Southeastern Louisiana University, two computer specialists, Tom F. Griffin and Michael C. Budden, were holding a seminar on computer services for small businesses. Attending the seminar was Mary Lou Lee, Amite City's town clerk. Impressed with what she heard, Lee convinced the town to approach the two professors about developing a system within budget limitations.

Award of Merit

Completed in November 1985, the system cost $9,785. In less than two years, the billing system already has paid for itself by saving the town more than $10,000 in unpaid bills, postage and handling. This type of efficiency and savings earned Amite City the *American City and County* 1986 Award of Merit, office automation division.

Budden says although he enjoyed helping the town, the transition was hectic at first. "In order to computerize the garbage and water billing system," he says, "we had to make sure the correct address was matched up with the right person, so we got together with the post office and the town, and conducted a field audit.

"What we found out," he adds, "was about 300 people were not being billed, which was amazing considering the size of Amite (population 4,429). The amount of money they got by putting these people online practically paid for the system in the first year."

The town received more than $6,000 in revenue from the field audit. In addition, Budden says, about 5 cents per-card per-route was saved because the bills now are presorted by carrier route instead of being sent first class.

The system consists of two 10-megabyte hard-disked-based microcomputers, word processing and database software, a high-speed printer and letter-quality printer. According to Budden, the menu-driven system is "bombproof," and almost anyone could sit down and learn to use it within a day.

"We used a Tandy model 1200HD PC, which is an IBM PC/XT-compatible unit; however, Tandy no longer markets that particular model," Budden says. "It will run on any system using an IBM PC/XT or compatible unit. It's a system to be used primarily for small towns."

The town liked the new system so much an additional $5,000 was budgeted and the two professors were asked to expand it. They added the sales tax, occupational license tax and most of the town's accounting system.

"They like the new system," Budden says, "or at least their CPA does. Tom (Griffin) and I enjoyed developing it." Lee summed up the town's feelings, saying, "We're very satisfied with the system. It has made things so much easier. It really is a delight." ☐

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formatting or re-entering data."

The speed of computers has enhanced public safety operations, cutting response time and allowing law-enforcement officers to be prepared more thoroughly.

The Police Department in Houston has used computers to cut response time on complaints to an average of seven minutes. When a complaint is lodged, the computer verifies the caller's location, routes the call to the proper dispatcher and checks for duplicate complaints from the same area of the city. A priority is assigned, an automatic display of the caller's address provided, and the nearest patrol car identified. Field officers can communicate with the dispatcher with mobile data terminals (MDTs). Officers can receive information on the computer screen rather than through radio transmissions. The MDTs also are linked to local, state and national law-enforcement and motor-vehicle databases, allowing officers to identify stolen cars and repeat offenders.

Schneider says connecting city operations with distant databases is the wave of the future. "Eventually, departmental groups will be connected with other city departments," he says. "Ultimately, cities will be linked with state governments, federal agencies and other distant databases."

Respondents also list the other types of office equipment used. More than 95 percent say they have in-house copiers and electric typewriters. Approximately half report using word processors. This equipment is instrumental to an integrated office system. Nearly 44 percent agree an integrated system includes "a set of office-related tools allowing all workers to generate, access, process, file, retrieve and distribute electronic messages, documents, data and graphics that are related and compatible with data processing and end-user computing."

"Computer technology will change the way government is structured," Schneider predicts. "Department lines are going to be blurred." He says private businesses already have restructured due to computerization. Some middle management positions have been cut, he says, because upper management, using computers, can obtain information directly from the field. He sees a parallel in the public sector, "but it may take some time." ☐

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MUNICIPAL COST INDEXES

The **Municipal Cost Index** rose for the ninth consecutive month, to 346.1. The last time the index dropped was October 1986. The **Construction Cost Index** increased from 380.8 to 381.4, while the **Consumer Price Index** rose .5 percent, from June's 335.9 to 337.7. The **Producer Price Index** experienced the most growth during the past month, from 302.8 in June to July's 305.1.

Energy and petroleum products showed the most growth in July, with diesel fuel, fuel oil no. 2, gasoline and residual fuel rising. In the construction area, asphalt roofing fell .1 percent from last month, while portland cement increased .3 percent. Sand and gravel increased .6 percent, and lumber rose .4 percent over last month.

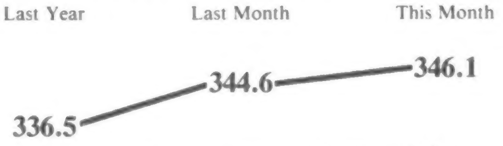
— *Compiled by Tim Darnell*

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.4	.2	.7
Apparel	186.3	.3	.9
Asphalt Roofing	366.0	−.1	−7.5
Books	144.9	.6	4.5
Chemicals, Industrial	331.1	1.9	2.1
Coal	521.9	−2.1	−3.4
Concrete Products	325.7	.3	−.2
Construction Machinery	383.1	.3	1.9
Diesel Fuel	412.9	4.2	4.7
Electric Components	202.2	.2	.9
Electric Lamps	347.5	−.7	−.3
Electric Power	438.4	−.8	−3.3
Engines, I.C.	359.0	−.1	1.8
Fans, Blowers	371.4	−.3	.9
Fertilizers, Mixed	255.6	.5	.2
Floor Coverings	198.0	.7	1.4
Flow Instruments	239.9	.1	2.3
Footwear	264.9	−.2	1.0
Foundry Products	363.7	.2	−.2
Fuel Oil No. 2	435.3	4.8	3.7
Furniture	326.3	.8	3.1
Gasoline	388.8	5.5	14.2
Generator Sets	355.0	.4	1.4
Glass	236.9	1.0	3.0
Glass Containers	403.8	−.1	2.3
Gypsum Products	324.5	−.9	−6.3
Hardware	306.0	.2	0
Heating Equipment	274.7	.1	3.0
HVAC Controls	131.8	−.3	3.9
LP Gas	345.9	−3.8	−8.0
Lubricants	351.5	1.5	−6.8
Lumber	328.4	.4	6.9
Metal Fabrications	318.8	.1	1.2
Millwork	326.4	.7	3.6
Motor Vehicle Parts	368.0	−.4	2.7
Mowers	265.3	.4	.6
Natural Gas	1098.1	2.7	−15.2
Office Machines	157.5	.1	2.1
Paint	322.7	1.9	2.1
Paper	315.3	.8	3.9
Passenger Cars	240.6	2.4	3.4
Plumbing Fixtures	331.3	−.1	2.7
Plywood	234.6	−2.3	−4.0
Portland Cement	346.8	.3	−3.8
Residual Fuel	614.6	3.9	18.8
Sand, Gravel	328.4	.6	3.7
Sanitary Papers	387.0	.4	1.5
Soaps, Detergents	274.6	−.1	.4
Sporting Goods	208.6	−.1	1.6
Steel Mill Products	353.4	0	1.8
Struc. Clay Products	315.6	.9	2.9
Switchgear	290.9	0	1.5
Tires, Tubes	232.2	.4	−1.6
Transformers	236.1	−.4	.6
Trucks	344.9	−.3	.6
Valves	106.9	−1.1	.1
Wire, Cable	203.7	−.8	−1.5
Wiring Devices	378.8	−.2	1.3

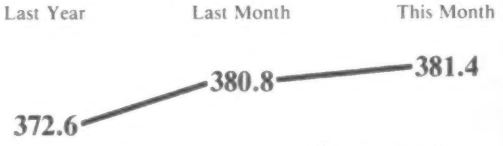
At-A-Glance Changes

MUNICIPAL COST INDEX



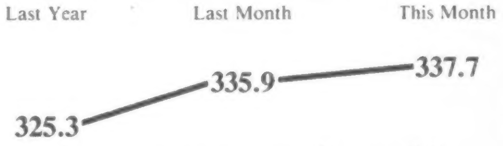
Percent Change From Last: Month **.4** Year **2.9**

CONSTRUCTION COST INDEX



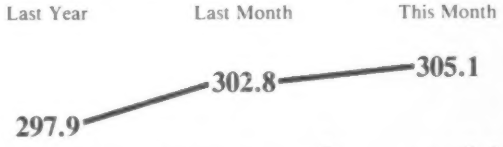
Percent Change From Last: Month **.2** Year **2.4**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **.5** Year **3.9**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **.8** Year **2.4**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	634.8B	.9	7.8
Federal Grants	104.1B	6.6	−10.9
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	−6.0
Services	387.4B	2.3	8.0
Structures	64.6B	−2.7	16.2
Salaries, Wages	309.8B	2.3	6.0
Surplus	59.4B	−7.7	1.0
Employment	13.999M	−.4	2.7

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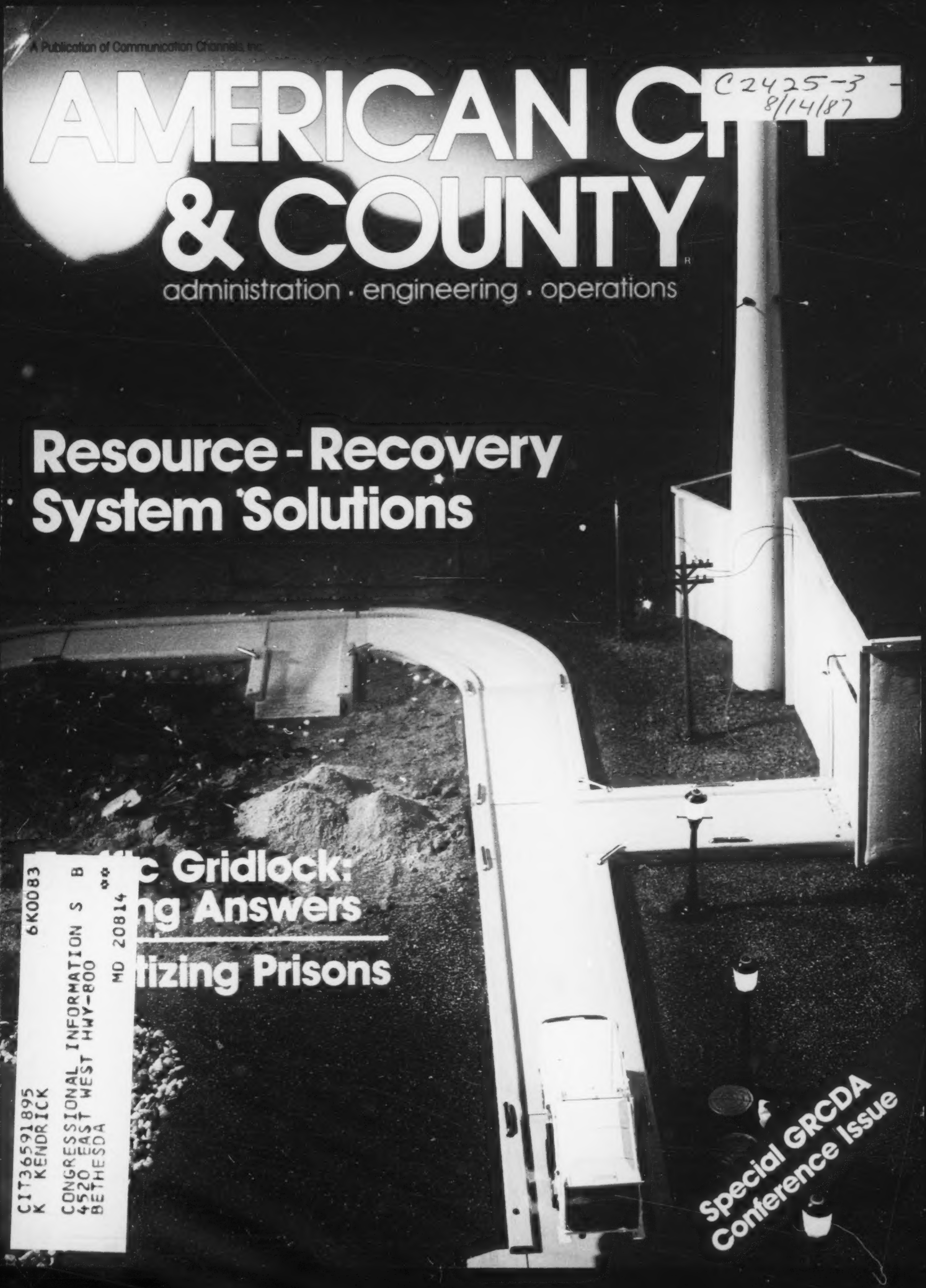

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August 1987 Vol. 102, No. 8

TRAFFIC

20 Gridlock
As the suburban population balloons and highways become more crowded, cities and counties are searching for new answers to traffic problems. ☐ **22** Houston Gears Up Transitway System ☐ **24** Teaneck, N.J., Formulates Detailed Traffic Plan ☐ **26** Controlling Traffic with Fiber Optics

PUBLIC SAFETY

29 Privatizing Prisons
Contracting raises a host of legal, quality and liability questions, but the private sector already is providing a variety of services for correctional facilities. ☐ **30** Teamwork Pays Off in Potosi

COVER STORY

RR 1 Resource Recovery Report
Cover photo by Jerry Hoy/Double Vision
The advent of reliable waste-to-energy systems brings the need for public officials to look at all the options in order to make the best decision. ☐ **RR 6** Selecting the right site ☐ **RR 7** Turnkey approach chosen ☐ **RR 8** The financial game plan ☐ **RR 11** The modular alternative ☐ **RR 12** The future of landfill gas projects ☐ **RR 14** Sonoma County computerizes landfill operations ☐ **RR 18** Choosing a vendor ☐ **RR 20** Ash disposal or re-use? ☐ **RR 21** Cooperation fuels waste-disposal plan ☐ **RR 22** Nashville facility heats downtown office buildings

SPECIAL REPORT

60 Congress Taking Action To Alter Welfare Program
The nation's welfare system has not been changed much in recent years, but Congress has begun to legislate with a vengeance.

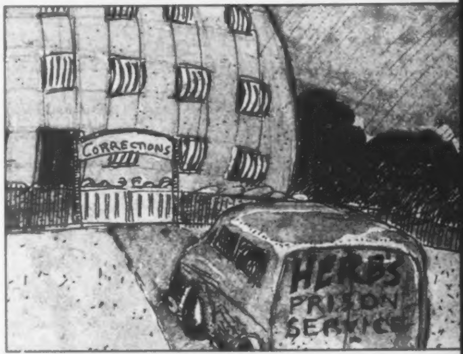
COLUMNS

10 Inside Washington . . . Despite the release of highway funds in April, the construction industry and infrastructure programs still are reeling from the six-month delay.

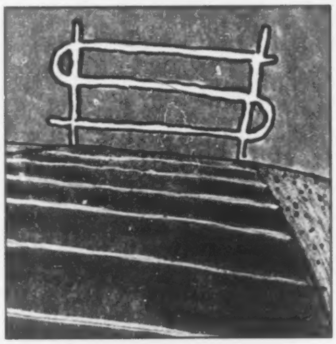
12 Financial Management . . . Substantial changes are being made in standards for reporting financial information concerning employee pensions.

14 Office Automation . . . Service bureaus can offer flexibility for electronic-publishing requirements.

20 Traffic Gridlock



29 Privatizing Prisons



RR1 Resource Recovery

DEPARTMENTS

16 Across America
6 Calendar
73 Classified
4 Editor's View
76 Municipal Cost Indexes
64 New Products
8 Newsmakers
70 Professional Services
69 Services & Contracts
66 Video & Print

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Pension Standards Changing

By Paul Zorn

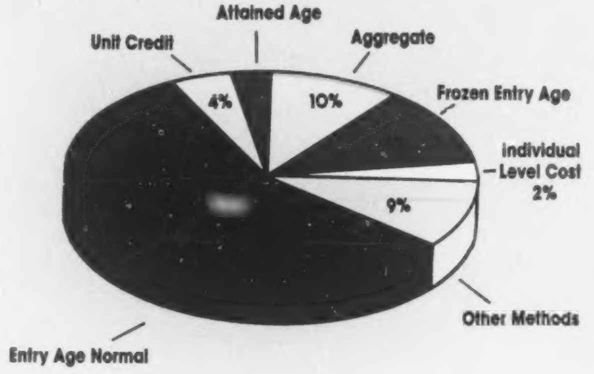
Substantial changes are being made in the standards by which public entities account for and report financial information concerning employee pensions. Significant changes already have been made in a number of areas, including requirements to provide information about the funding status of public-employee retirement systems, the progress made in accumulating assets to pay benefits, and whether or not public employers are making actuarial-determined contributions.

Deliberations currently are underway to revise standards for the recognition, measurement and presentation of pension assets, expenditures and liabilities in the financial statements of public entities.

A recent survey of public-employee retirement systems, conducted by the Public Pension and Benefits Consortium of the Government Finance Officers Association, suggests these changes will affect the current accounting and reporting practices substantially. The survey results were based on 171 responses from the state and local levels. Public officials not only must become aware of the changes already made, but also changes being made in the coming year.

In November 1986, the Governmental Accounting Standards Board (GASB) issued Statement 5, "Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Governmental Employers." The GASB, organized in 1984 to establish financial-reporting standards for state and local governments, is the successor to the National Council on Governmental Accounting, whose standards remain in effect until superceded by the GASB.

If contributions are determined on an actuarial basis, what acturial method is used?



SOURCE: GFOA Pulbic Pension and Benefits Consortium

Statement 5 establishes standards for disclosing pension information by public-employee retirement systems (PERS), and state and local governmental employers in footnotes to financial statements and in supplemental information. The standards are applicable to all governmental entities wishing to report in conformance with generally accepted accounting principals.

The standards require detailed disclosures regarding plan provisions, actuarially determined contribution requirements, significant actuarial assumptions, contributions actually made and multi-year historical-trend information.

Statement 5 also requires computation and disclosure of the "pension benefit obligation," a standarized measure of pension benefits intended to help financial-statement users assess the funding status of the PERS. This measure, which may be different from the actuarial-funding method used to determine required contributions to the PERS, is the "actuarial present value of credited, projected benefits prorated on service" and adjusted for the effects of salary increases and step-rate benefits.

While stringent, Statement 5 offers some relief for small PERS. In place of the pension-benefit obligation, these entities may disclose the actuarial-accrued liability developed from an acceptable actuarial-funding method. In addition, small systems are not required to conduct annual actuarial updates.

In order for footnote disclosures to conform with accepted accounting principles, Statement 5 requires actuarial valuations be carried out at least once every two years. While 77 percent of survey respondents reported making contributions to the PERS on an actuarial basis, respondents from small PERS were far less likely to have actuarially based contributions.

Actuarial valuations are used to allocate monies required to fund the long-term value of employee benefits. Based on demographic information about the employees and assumptions about the rate of return on plan investments, an actuary calculates the amount of employer contributions necessary for the orderly accumulation of plan assets.

Different methods of actuarial valuation result in different patterns of employer contributions to the plan. Generally, the two families of actuarial-valuation methods are benefit and cost methods. The unit-credit actuarial cost method is the primary offspring of the benefit family, while the cost family has several offspring, including the entry-age-normal, attained-age and individual-level cost method.

Although Statement 5 does not require the use of a specific actuarial-valuation method, it does require disclosure of the "pension-benefit obligation" calculated as the actuarial present value of credited projected benefits.

The survey, however, shows most public-employee retirement systems use the entry-age-normal method for actuarial valuations. Therefore, to conform with Statement 5, most PERS are required to have their actuaries compute the actuarial present value of credited projected benefits in addition to the current method of actuarial valuation.

In some cases, this computation may be available readily from the actuary as a product of the computer program used to conduct the actuarial valuation.

Statement 5 does not address the issues surrounding the recognition, measurement and presentation of information on the face of PERS financial statements. In order to address these questions, the GASB has begun the second phase of its pension accounting project, which will address questions relating to the recognition and measurement of assets, periodic costs, and liabilities associated with defined benefit plans for public employees. □

Paul Zorn is an assistant director with the Government Finance Research Center of the Government Finance Officers Association.

MUNICIPAL COST INDEXES

The **Municipal Cost Index** rose to 347.5, a 0.4-percent increase over July's 346.1. The index has not declined in 1987, and has risen for 10 consecutive months. The **Construction Cost Index** also rose 0.4 percent from last month, from 381.4 to 382.8. The **Consumer Price Index** saw the smallest increase, a 0.3-percent rise from 337.7 to 338.7. In contrast, the **Producer Price Index** saw the sharpest jump over last month, an increase of 2.7 percent from July's 305.1 to 307.3.

Steel mill products experienced no change over last month's figures, along with electric components and internal combustion engines. Energy and petroleum products continued to show growth, with LP gas rising 5.8 percent and fuel oil no. 2 rising 2.8 percent.

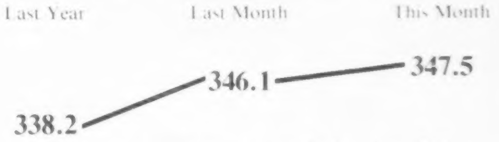
— Compiled by Tim Darnell

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.8	0	0.4
Apparel	186.4	0.1	0.8
Asphalt Roofing	346.0	-0.5	-8.0
Chemicals, Industrial	335.1	1.2	5.4
Coal	520.2	-0.3	-3.6
Concrete Products	325.4	-0.1	-0.3
Construction Machinery	375.9	0.8	2.6
Diesel Fuel	423.3	2.5	16.4
Electric Components	202.3	0	0.8
Electric Lamps	347.3	-0.1	0.1
Electric Power	439.0	0.1	-3.6
Engines, I.C.	358.9	0	1.8
Fans, Blowers	370.6	-0.2	0.7
Fertilizers, Mixed	253.2	-0.9	-0.8
Floor Coverings	199.2	0.6	1.7
Flow Instruments	240.7	0.3	2.3
Footwear	266.5	0.6	1.8
Foundry Products	364.1	0.1	-0.1
Fuel Oil No. 2	447.6	2.8	10.1
Furniture	259.0	0.1	2.2
Gasoline	392.4	0.9	3.6
Generator Sets	355.2	0.1	1.2
Glass	235.5	-0.6	2.5
Glass Containers	397.3	-1.6	-0.5
Gypsum Products	334.4	3.1	-7.2
Hardware	307.1	0.4	0.3
Heating Equipment	274.8	0	3.1
HVAC Controls	131.6	-0.2	5.0
LP Gas	366.1	5.8	8.6
Lubricants	348.7	-0.8	5.0
Lumber	331.0	0.8	7.2
Metal Fabrications	318.1	-0.2	1.0
Millwork	328.1	0.5	3.6
Motor Vehicle Parts	367.9	0	2.7
Mowers	265.6	0.1	0.7
Natural Gas	1122.6	2.2	-12.6
Office Machines	158.6	0.7	2.7
Paint	325.0	0.7	3.5
Paper	314.5	-0.3	3.3
Passenger Cars	239.0	-0.3	3.6
Plumbing Fixtures	332.2	0.3	2.8
Plywood	230.5	-1.7	-3.9
Portland Cement	348.7	0.5	-1.8
Residual Fuel	639.9	4.1	34.0
Sand, Gravel	329.5	0.3	3.8
Sanitary Papers	382.5	-1.2	-0.1
Soaps, Detergents	277.1	0.9	1.1
Sporting Goods	208.4	-0.1	1.2
Steel Mill Products	353.5	0	1.3
Struc. Clay Products	316.7	0.3	3.2
Switchgear	291.1	0.1	1.5
Tires, Tubes	231.0	-0.5	-1.7
Transformers	236.9	0.3	1.7
Trucks	344.4	-0.1	-0.6
Valves	108.5	1.5	1.6
Wire, Cable	206.3	1.3	-0.2
Wiring Devices	381.3	0.7	2.1

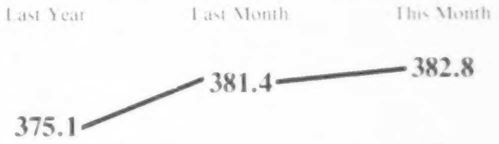
At-A-Glance Changes

MUNICIPAL COST INDEX



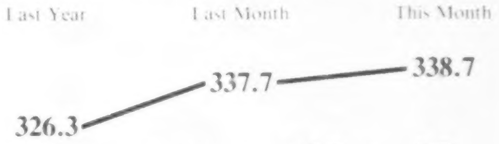
Percent Change From Last: Month **0.4** Year **2.7**

CONSTRUCTION COST INDEX



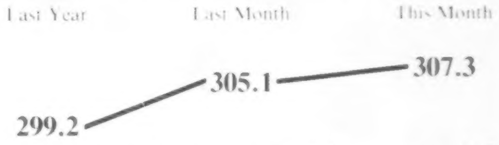
Percent Change From Last: Month **0.4** Year **2.0**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **0.3** Year **3.8**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **2.7** Year **0.7**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	634.8B	.9	7.8
Federal Grants	104.1B	6.6	-10.9
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	-6.0
Services	387.4B	2.3	8.0
Structures	64.6B	-2.7	16.2
Salaries, Wages	309.8B	2.3	6.0
Surplus	59.4B	7.7	1.0
Employment	13.999M	-.4	2.7

September 1987
American City & County
Volume 102, Number 9

Evaluating Rules
For Clean Water

Trade Shows:
Do They Help?

Mayors' Urban
Investment Policy

Managing Park
Maintenance

HOW TO IMPROVE YOUR OPERATIONS

Assessing Your
Transit Needs

States Assist
With Streets

The Best Pipe
For Your Water

Special Show
Product Review

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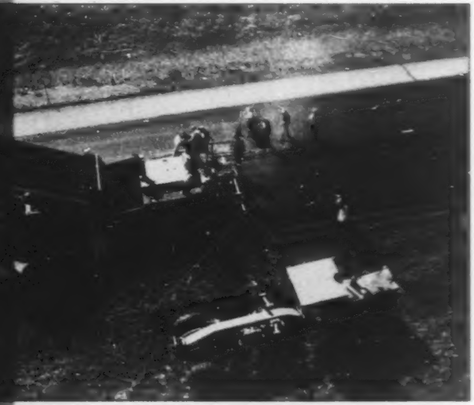
September 1987 Vol. 102, No. 9

WATER SUPPLY

40 Water Woes
The National Council on Public Works Improvements says a national mandate is needed requiring water utilities to be financially self-sufficient through rates.

42 How Clean Is Clean?
As the public becomes more concerned with the quality of its drinking water, Congress has passed new regulations that may mean significant changes for local water-supply systems. ☐ **44** EPA Regulates Eight VOCs ☐ **50** Underground Tank Systems Require Close Scrutiny ☐ **50** Desalination Becoming Important Alternative ☐ **54** Provincetown Tackles Contaminated Aquifer

56 Pipe Dreams
Choosing the right pipe for the right project can be a nightmare. ☐ **58** Rival Cities Join Forces to Build Water Pipeline ☐ **60** An Innovative Solution to Potable Water Problems



STREETS & HIGHWAYS

64 Road Repair
The centerpiece of the highway development and revenue system is a user-charge relationship.

66 States Assisting With Local Roads
As government budgets tighten, cities and counties are creating partnerships with their state governments. ☐ **71** Collapsed Interstate Reopened Quickly

76 Soft Wear For Roads
Today's maintenance systems are used to inventory facilities, justify budget increases, prioritize repair needs and provide better roads at lower costs. ☐ **78** Urbana Uses Computerized Capital Improvement Plan ☐ **80** System Allows Preventive Maintenance ☐ **84** Tolls Could Help Highway Financing ☐ **85** The Rehabilitation Crisis

FINANCE

86 Shaping an Urban Investment Policy
The U.S. Conference of Mayors is recommending a national mandate to strengthen the country's position in the global market by revitalizing its urban areas. ☐ **88** Cities Have Their Backs to the Wall ☐ **90** Maintaining Quality a Key to Successful Management ☐ **94** San Marcos Acquires Electric System ☐ **95** Minneapolis Program Stimulates Productivity ☐ **96** Jacksonville Offers Triple-Option Insurance ☐ **98** Assessing Tax-Exempts for Mass Transit ☐ **99** Self Insurance Provides Alternative for Prescott

Cover Design by Deb Gaston of Atlanta

PUBLIC TRANSIT

104 Transit Choices
The National Council on Public Works calls for a decreased federal role in mass transit.

107 Transportation Finance: Finding New Methods
Realizing economic development is tied to transportation, new public and private initiatives are being developed for financing mass-transit and highway projects. ☐ **108** Morris County Saves Vital Rail Link

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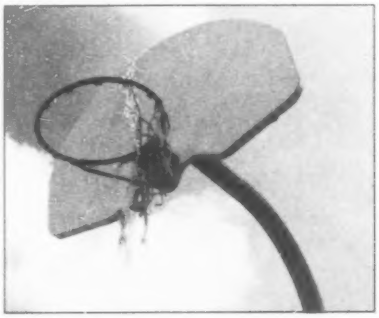
PARKS & RECREATION



116 Park Programs on the Rebound
With limited resources and expanded responsibilities, park officials have adopted creative maintenance approaches, using volunteers, computer programs and the private sector. ☐ **118** Protecting the Urban Forest Pays Dividends ☐ **120** Solar System Heats Aging Pool ☐ **122** Hoffman Estates Builds Income-generating Center

---

Convention Exhibits

TRADE SHOWS

126 Trade Shows: Do They Help?
Local officials have a plethora of trade shows available, but careful study is required to pick and choose the most appropriate exhibitions and seminars. ☐ **130** A Trade Show Menu ☐ **132** APWA Product Review

---

PUBLIC SAFETY

134 Eliminating PCBs
Communities are ridding transformers of PCBs by retrofilling. ☐ **138** Record-keeping Vital When Disaster Strikes

---

AWARDS OF MERIT

140 Award of Merit Entries
Competing community projects are reviewed.

COLUMNS

18 Inside Washington . . . Rural transit agencies receive little recognition and few funds from Washington.

20 Financial Management . . . A new application for lease-purchase financing offers savings and flexibility.

22 Office Automation . . . Everything from housing trends to voter registration can be mapped on a micro-based system.

DEPARTMENTS

27 Across America
6 Calendar
156 Classified
145 Consult the Experts
4 Editor's View
160 Municipal Cost Indexes
142 New Products
16 Newsmakers
12 Readers' Forum
151 Software Marketplace
153 Professional Services
148 Services & Contracts
149 Video & Print

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MUNICIPAL COST INDEXES

All four indexes rose 0.4 percent over last month's figures, with the **Municipal Cost Index** continuing its rise to 348.9. This marks the 11th consecutive month the index has risen. The **Construction Cost Index** rose to 348.4, while the **Consumer Price Index** read 340.1. The Consumer Price Index also increased the most from last year, up 3.7 percent. The **Producer Price Index** also registered a high increase over last year at 308.5, compared with a September 1986 figure of 298.9.

Air conditioners dropped only 0.1 percent from last month's 149.8; passenger cars declined 0.1 percent from 239.9 to this month's 239.7. Trucks saw an increase of 0.3 percent, to 345.4, compared with August's 344.4.

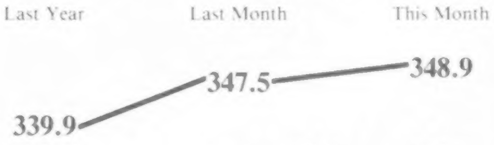
— Compiled by Tim Darnell

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.7	−0.1	0.3
Apparel	187.5	0.6	1.4
Asphalt Roofing	363.3	−0.2	−6.2
Chemicals, Industrial	344.1	2.7	8.7
Coal	519.0	−0.2	−3.7
Concrete Products	325.6	0.1	0
Construction Machinery	375.6	−0.1	2.4
Diesel Fuel	437.1	3.3	25.5
Electric Components	358.9	0	1.6
Electric Lamps	347.5	0.1	0.1
Electric Power	454.2	3.5	−2.0
Engines, I.C.	358.9	0	1.6
Fans, Blowers	370.0	−0.2	1.2
Fertilizers, Mixed	254.0	0.3	−0.5
Floor Coverings	197.2	−1.0	0.3
Flow Instruments	239.7	−0.4	1.9
Footwear	263.4	−1.2	1.0
Foundry Products	363.8	−0.1	−0.1
Fuel Oil No. 2	462.4	3.3	21.9
Furniture	326.8	0.1	2.9
Gasoline	404.4	3.1	3.0
Generator Sets	355.5	0.1	1.9
Glass	237.1	0.7	3.2
Glass Containers	400.8	0.9	0.1
Gypsum Products	328.3	−1.8	−7.3
Hardware	307.6	0.2	0.4
Heating Equipment	273.7	−0.4	2.1
HVAC Controls	131.4	−0.2	3.6
LP Gas	354.6	−3.1	−3.6
Lubricants	345.1	−1.0	−7.6
Lumber	332.4	0.4	7.3
Metal Fabrications	317.7	−0.1	0.7
Millwork	329.7	0.5	3.2
Motor Vehicle Parts	368.0	0	2.7
Mowers	266.1	0.2	0.8
Natural Gas	1102.6	−1.8	−11.1
Office Machines	158.8	0.1	2.8
Paint	332.5	2.3	5.6
Paper	314.2	−0.1	3.0
Passenger Cars	239.7	−0.1	3.2
Plumbing Fixtures	333.4	0.4	2.9
Plywood	229.2	−0.6	−2.7
Portland Cement	345.5	−0.9	−2.2
Residual Fuel	650.8	1.7	43.7
Sand, Gravel	330.2	0.2	3.9
Sanitary Papers	382.5	0	−0.2
Soaps, Detergents	277.0	0	1.0
Sporting Goods	208.6	0.1	1.0
Steel Mill Products	354.0	0.1	1.5
Struc. Clay Products	318.0	0.4	3.0
Switchgear	292.5	0.5	2.7
Tires, Tubes	231.0	0	−1.6
Transformers	234.1	−1.2	0.5
Trucks	345.4	0.3	−0.3
Valves	107.3	−1.1	0.5
Wire, Cable	207.2	0.4	0.4
Wiring Devices	380.7	−0.2	1.5

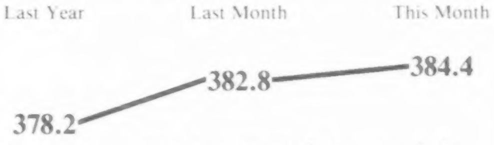
At-A-Glance Changes

MUNICIPAL COST INDEX



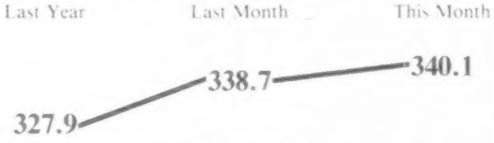
Percent Change From Last: Month **0.4** Year **2.6**

CONSTRUCTION COST INDEX



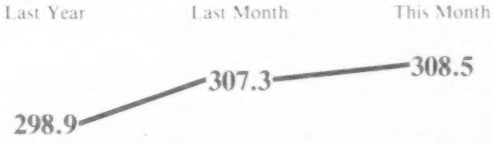
Percent Change From Last: Month **0.4** Year **1.6**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **0.4** Year **3.7**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **0.4** Year **3.2**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	634.8B	.9	7.8
Federal Grants	104.1B	6.6	−10.9
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	−6.0
Services	387.4B	2.3	8.0
Structures	64.6B	−2.7	16.2
Salaries, Wages	309.8B	2.3	6.0
Surplus	59.4B	−7.7	1.0
Employment	13.999M	−.4	2.7

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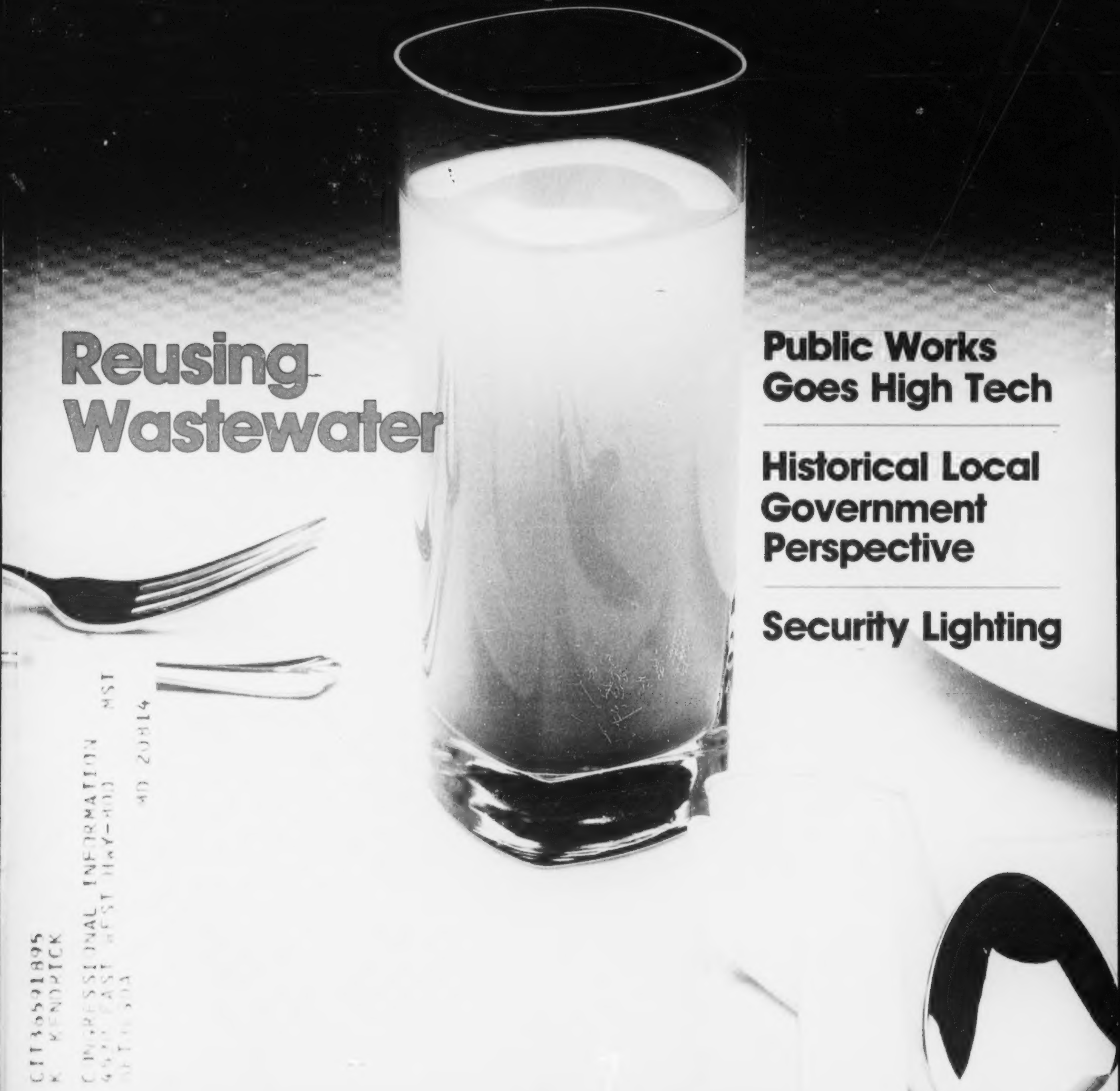

Reusing Wastewater

Public Works Goes High Tech

Historical Local Government Perspective

Security Lighting

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CONGRESSIONAL INFORMATION MST
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BETHESDA MD 20814

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BPA

October 1987 Vol. 102, No. 10

COVER STORY

34 **Reusing Wastewater**
Cover photography by Terri Teague, Atlanta
Water from sewage can be converted from a liability to a resource, helping to conserve potable water supplies. ☐ **36** Milwaukee Saves With Flow Management ☐ **38** San Francisco Solves Stormwater Difficulties ☐ **40** Reclaimed Wastewater Safe for Irrigation ☐ **44** Sewer Reconstruction Saves Waterville, Maine, $1 Million ☐ **46** Battle Creek Chooses VCP for Industrial Park Project ☐ **46** Rehabilitation a Less-Costly Alternative ☐ **47** Sacramento Automates Wastewater Operations ☐ **48** Lining Helps Minnesota Town Protect Lake ☐ **49** Greenville, S.C., Lowers Costs

OFFICE AUTOMATION

51 **Public Works Goes High Tech**
Technology and new forms of automation are making life easier for engineers and managers. ☐ **52** Memphis Uses Software To Attract Industry ☐ **56** Fuel-Inventory Program Helps Richmond ☐ **58** Massachusetts Road Sensors Reveal Traffic Conditions ☐ **62** Software Lowers Water-Production Costs

MANAGEMENT

64 **Has It Ever Been Easy?**
The good old days may not have been all that wonderful. Problems between communities, counties and the national government can be traced back 1,000 years. ☐ **66** Fleet Management by the Book ☐ **68** The Infrastructure Value Mix ☐ **70** Parkway Partners Keep New Orleans Tidy ☐ **71** Training Sessions Helpful

LIGHTING

72 **Product Review of Indoor/Outdoor Lighting**
☐ **74** Henderson's Outdoor Lighting Reduces Costs

SPECIAL REPORT

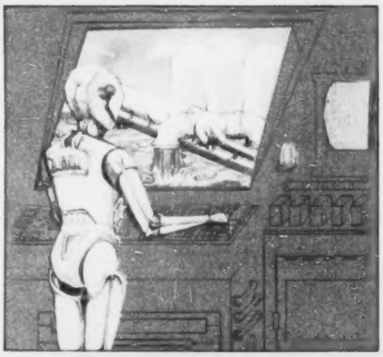
76 **Initial Planning Reduces Prison Liability Problems**
☐ **79** CM Approach Used for Prison Program

COLUMNS

14 **Inside Washington** . . . Water Pollution Control Federation broadens concerns to include hazardous-wastes issues.

16 **Financial Management** . . . States must act as support mechanisms to help revive nation from its competitive complacency.

20 **Office Automation** . . . Computer networks will cause an immense impact.



50 High-Tech Works

34 Wastewater Solutions

64 Good Old Days?

DEPARTMENTS

4 Editor's View
6 Calendar
10 Readers' Forum
12 Newsmakers
24 Across America
81 Resource Recovery
82 New Products
84 Services & Contracts
85 Software Marketplace
86 Professional Services
89 Video & Print
90 Classified
94 Municipal Cost Indexes

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Pennsylvania Court Nixes Refuse Fee

"If government cannot provide services at least of a quality and at a cost commensurate with similar services provided by private enterprise, it is, by definition, unreasonable to utilize tax dollars for that purpose. That many have lost sight of that patently obvious idea is as unfortunate as it is surprising."

So saying, the Pennsylvania Supreme Court has invalidated a township ordinance requiring property owners to pay more than $58,000 for the same local-government refuse-collection services provided by a private refuse contractor for about $23,000.

Under Pennsylvania law, a township may impose "reasonable fees and charges" for the collection, removal and disposal of garbage, rubbish and other refuse from private property. As part of its refuse-collection ordinance, Ridley Township requires all residential garbage be collected, hauled and disposed of by the township, while commercial operations such as businesses, hotels and restaurants must arrange for private refuse collection.

The 241 apartment units of the one complex produce almost 90 cubic yards of refuse each week. Since the township cannot provide refuse pickup more than twice a week, and since its trucks cannot manipulate refuse containers larger than 2.5 cubic yards, the complex (if it were not utilizing the township collection services) would either have to buy 18 trash containers or permit its tenants to place their refuse out for pickup in individual containers.

Instead, the complex contracted a private hauler to remove refuse three times a week from five contractor-supplied dumpsters, each having a capacity of 6 cubic yards. Between 1977 and 1981, the complex paid $22,929 to the private contractor, while also paying $58,156 in fees to the township under the refuse-collection ordinance.

The complex wanted no part of the township refuse-collection services. Purchasing small dumpsters would be costly, and using them would eliminate some parking spaces. In addition, property owners feared the smaller containers would present a hazard to children, attract rodents and be difficult to secure because of their lighter weight. According to the complex, the private refuse contractor has provided better service (collecting three times a week instead of twice) at less than half the cost of the township service.

According to evidence presented, apartments in the township pay refuse fees totaling nearly 20 percent of all revenues from such fees, yet the township's cost of collecting refuse from apartments was between 5 percent and 9.5 percent of revenue. The township conceded its actual cost per unit in 1981 for collecting refuse from apartment complexes ranged from $20 to $30, but it charged residential units (including apartments) $70.

Although the court struck down the Ridley township refuse fee for apartment owners, the state court reaffirmed the broad discretion of government in determining which services it deems essential to citizens. But the justices reminded local officials government activities must be generally reasonable in purpose and, where the law requires, reasonable in cost. Thus, the court warned, public officials no longer can assume government-sponsored activities "no matter how outrageous, how costly, how uncompetitive" are safe from successful challenge.

— Barry Shanoff

SURVEY SPOTLIGHT

Smaller Communities Losing Young People

Small cities and towns are having problems keeping young people from moving out, in large part because they are unable to attract jobs and industry, according to a National League of Cities (NLC) survey conducted in the spring. Two out of five communities said small-business closings and farm foreclosures were on the rise, while one-third indicated unemployment was increasing.

The NLC survey of 395 cities and towns with less than 50,000 people found 26 percent were experiencing difficulty retaining young people and 55 percent reported a growing elderly population.

"The loss of young people is bad news for any community and it is a situation that points to other problems down the road if it cannot be stabilized," says NLC Executive Director Alan Beals. "If these are cyclical events, and there are some signs that things have bottomed out, then we can hope the jobs and farms will rebound and that fewer young people will migrate elsewhere."

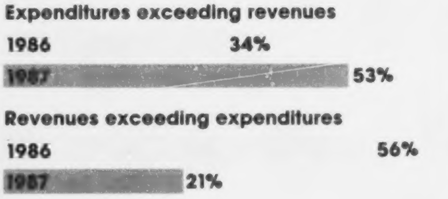
More than half of those surveyed expected expenditures to outpace revenues in 1987, compared with a third in 1986. The difference must be made up by decreasing fund balances, making additional cuts in expenditures or imposing new taxes or fees, since local governments generally are prohibited from creating deficits.

Despite these problems, many local officials surveyed were optimistic about their ability to make those adjustments and carry on with fewer funds, Beals says. More than 40 percent said their ability to attract businesses and jobs has improved, 37 percent reported overall economic conditions were better and 33 percent said housing availability and affordability were improving.

"While many small cities and towns were hard hit by the loss of revenue sharing, they continue to provide a broad range of basic public services, although often at reduced levels," Beals says. "They are working harder than ever to strengthen their local economic base, to attract businesses and to create jobs."

— Ellen Perlman

Small cities are having more difficulty balancing their budgets, according to a survey by the National League of Cities. Data show revenues are not meeting expenditures.



MUNICIPAL COST INDEXES

The **Municipal Cost Index** rose 0.5 percent from September, to 350.6, marking a steady rise for 12 consecutive months. The last time the index dropped was September 1986. The **Construction Cost Index** read 386.8, while the **Consumer Price Index** saw the least gain from last month, to 340.8. The **Producer Price Index** saw the highest gain from last year, with a 4.2-percent increase to 310.2.

Transformers and power regulators rose to 235.8, a 1.2-percent jump over last year. Metal valves rose 0.3 percent from September, to 107.6, while wiring devices rose 2.3 percent from October 1986, to 383.6. Nonferrous wire and cable also rose 2.3 percent from last year, to 210.4.

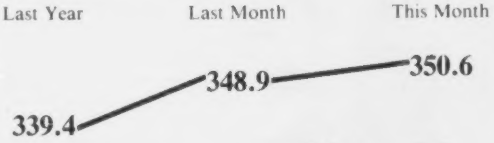
— Compiled by Tim Darnell

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.7	0	0.3
Apparel	188.5	0.5	1.8
Asphalt Roofing	362.4	−0.2	−6.3
Chemicals, Industrial	341.7	−0.7	8.1
Coal	517.0	−0.4	−4.1
Concrete Products	326.0	0.1	0.1
Construction Machinery	374.7	−0.2	2.2
Diesel Fuel	447.2	2.3	55.5
Electric Components	204.0	1.1	0.8
Electric Lamps	347.5	0	0
Electric Power	466.2	2.6	−0.1
Engines, I.C.	359.2	0.1	1.5
Fans, Blowers	370.7	0.2	1.4
Fertilizers, Mixed	256.1	0.8	0.6
Floor Coverings	199.0	0.9	1.7
Flow Instruments	240.9	0.5	2.3
Footwear	268.5	1.9	2.9
Foundry Products	363.7	0	0
Fuel Oil No. 2	474.0	2.5	56.6
Furniture	326.6	−0.1	2.6
Gasoline	414.9	2.6	31.0
Generator Sets	357.0	0.4	1.2
Glass	237.6	0.2	1.7
Glass Containers	402.1	0.3	0.2
Gypsum Products	316.9	−3.5	−9.4
Hardware	306.9	−0.2	0.1
Heating Equipment	275.1	0.5	2.5
HVAC Controls	131.4	0	0.8
LP Gas	360.2	1.6	1.8
Lubricants	345.8	0.2	−6.3
Lumber	334.6	0.7	6.6
Metal Fabrications	319.3	0.5	1.2
Millwork	331.4	0.5	3.3
Motor Vehicle Parts	367.0	−0.3	2.3
Mowers	267.1	0.4	1.1
Natural Gas	1097.2	−0.5	−4.5
Office Machines	158.9	0.1	2.8
Paint	333.0	0.2	5.1
Paper	318.0	1.2	4.0
Passenger Cars	239.7	0	2.7
Plumbing Fixtures	332.8	−0.2	2.7
Plywood	232.7	1.5	−1.4
Portland Cement	347.0	0.4	−1.1
Residual Fuel	688.5	5.8	58.6
Sand, Gravel	330.0	−0.1	3.4
Sanitary Papers	384.7	0.6	0.7
Soaps, Detergents	277.2	0.1	1.0
Sporting Goods	209.3	0.3	1.0
Steel Mill Products	354.3	0.1	1.5
Struc. Clay Products	317.0	−0.3	1.9
Switchgear	291.4	−0.4	2.2
Tires, Tubes	232.2	0.5	−0.5
Transformers	235.8	0.7	1.2
Trucks	345.4	0	−0.7
Valves	107.6	0.3	0.6
Wire, Cable	210.4	1.5	2.3
Wiring Devices	383.6	0.8	2.3

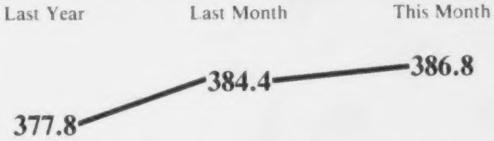
At-A-Glance Changes

MUNICIPAL COST INDEX



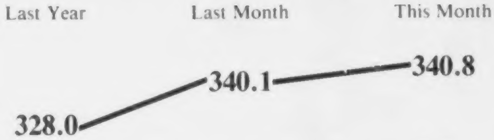
Percent Change From Last: Month **3.3** Year **0.5**

CONSTRUCTION COST INDEX



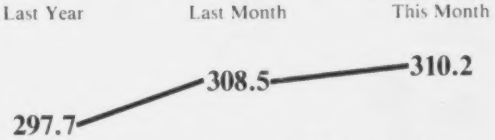
Percent Change From Last: Month **0.6** Year **2.4**

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month **0.2** Year **3.9**

PRODUCER PRICE INDEX (BLS)



Percent Change From Last: Month **0.6** Year **4.2**

These figures are calculated on a base year of 1967.

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	634.8B	.9	7.8
Federal Grants	104.1B	6.6	−10.9
Durable Purchases	23.6B	3.1	9.8
Consumables	37.6B	2.7	−6.0
Services	387.4B	2.3	8.0
Structures	64.6B	−2.7	16.2
Salaries, Wages	309.8B	2.3	6.0
Surplus	59.4B	−7.7	1.0
Employment	13.999M	−.4	2.7